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METROPOLITAN SCHOOL OF SCIENCE

APPLIED TO MINING AND THE ARTS.
Director—Sir Roderick Impey Murchison, D.C.L. M.A. F.R.S., &c.
During the Session 1856-57, which will commence on the 1st of October, the following COURSES OF LECTURES and PRACTICAL DEMONSTRATIONS will be given:—

1. Chemistry. By A. W. Hofmann, LL.D. F.R.S., &c.
2. Metallurgy. By John Percy, M.D. F.R.S.
3. Natural History. By T. H. Huxley, F.R.S.
4. Mineralogy. By G. G. Stokes, M.A. F.R.S.
5. Mining. By Warrington W. Smyth, M.A.
6. Geology. By A. C. Ramsay, F.R.S.
7. Applied Mechanics. By Robert Willis, M.A. F.R.S.
8. Physics. By G. G. Stokes, M.A. F.R.S.

Instruction in Mechanical Drawing, by Mr. Bions.
The fee for Matriculated Students (exclusive of the laboratories) is 30s. for two years, in one payment, or two annual payments of 20s.

Pupils are received in the Royal College of Chemistry (the laboratory of the School), under the direction of Dr. Hofmann, at a fee of 10s. for the term of three months. The same fee is charged in the Metallurgical Laboratory, under the direction of Dr. Percy. Tickets to separate courses of lectures are issued at 2s. 3d. and 4s. each. Officers in the Queen's or the East India Company's Service, Acting Mining Agents, and Managers, may obtain tickets at half the usual charges.

Certificated Schoolmasters, Pupil-Teachers, and others engaged in education, are admitted to the lectures at reduced fees.
H.R.H. the Prince of Wales has granted two Exhibitions, and others have also been established.

For a prospectus and information apply at the Museum of Practical Geology, Jernyn-street, London.
TRENHAM REEKS, Registrar.

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THE WINTER SESSION WILL COMMENCE ON WEDNESDAY, OCTOBER 1st, 1856; when the INTRODUCTORY LECTURE will be given at Half-past Two, P.M., by Mr. T. SPENCER WELLS.

- Anatomy and Physiology—Dr. Lankester, F.R.S.
Descriptive and Surgical Anatomy—Dr. Deville.
Chemistry—Mr. J. E. D. Rodgers.
Medicine—Dr. Ballard.
Surgery—Mr. Spencer Wells and Mr. Adams.
Military Surgery—Mr. G. E. Blinks.
Midwifery—Mr. Bloom.
Materia Medica—Mr. P. Ayres.
Forensic Medicine—Dr. B. W. Richardson.
Dental Surgery—Mr. R. T. Hulme.
Botany—Dr. Lankester.
Practical Chemistry—Mr. J. E. D. Rodgers.
Comparative Anatomy and Zoology—Mr. R. T. Hulme.

For further particulars and prospectus apply to Dr. Lankester, 8, Savile-row; Mr. R. W. Burford, at the School, 1, Grosvenor-place; or at the Residences of the respective Lecturers.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

THE THIRTEENTH ANNUAL CONGRESS will be held for Examination of Somersetshire Antiquities, at BRIDGWATER and at BATH, August 25, and terminating on the 30th.

Patrons—The Lord Lieutenant of the County and the Lord Bishop of the Diocese.
President—The Earl of Perth and Melfort.

Excursions will be made and visits paid to Glastonbury Abbey, Wells Cathedral, the Churches of St. Cuthbert, Martock, Stoke-sub-Hamdon, &c. the Bath Abbey Church, Roman Remains, &c. &c.—Tickets and Programmes to be obtained of T. J. Pettigrew, Esq., Treasurer, 10, Quaker-street, Brompton; and of the Curator, Mr. W. G. P. M. &c. 40, Pall Mall.

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Office of the Arundel Society, JOHN NORTON, Secretary, 54, Old Bond-street.

MANCHESTER PHOTOGRAPHIC SOCIETY.

THE FIRST ANNUAL EXHIBITION will be OPENED on the 9th of September. It is requested that all Pictures be sent in on or before August 26th, directed to the Secretary of the Photographic Exhibition Committee, Mechanics' Institution, David-street, Manchester.—For further information apply to ARTHUR NEILD, Esq., Nicholas-street, Manchester.

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14th August, 1856.

THE FIRST PROVINCIAL MEETING OF THE NATIONAL REFORMATORY UNION

will take place at BRISTOL, on the 29th, 31st, and 1st of AUGUST.
President of the Meeting.
LORD STANLEY, M.P.

Chairmen of Sections.
LORD ROBERT GECIL, M.P.

RIGHT HON. SIR JOHN S. PAKINGTON, Bart. M.P.

W. D. HILL, Esq. Q.C.

M. D. HILL, Esq. Q.C.

Public Meetings will be held and Papers will be read by Sir Stafford Northcote, Bart. M.P., Rev. Sydney Turner, Miss Carpenter, and others.—A Conversational Soirée at the Victoria Rooms on the 29th. Excursions on the 2nd. Tickets, admitting to all the Meetings, price 5s. each, may be obtained at the Reception Room, Queen's Hotel, Clifton, where all further information will be given by the undersigned.
H. BENGOUGH, } Hon.
G. W. HASTINGS, } Secs.

BELGIAN FREE TRADE CONGRESS FOR

INTERNATIONAL CUSTOMS REFORM.—MEETING at BRUSSELS, SEPTEMBER 25, 26, 27. Copies of Rules of Organization, &c. for sale, and all information, on application to the London Office of the Congress.—9, NEW PALACE-YARD, WESTMINSTER.

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LONDON, SATURDAY, AUGUST 16, 1936.

REVIEWS

Life of George Washington. By Washington Irving. Vols. I. to III. Bohn.

Mr. Washington Irving, one of the most distinguished of American writers, is well fitted to be the biographer of the greatest of American patriots. Like Washington, he has a devout admiration of those high English feelings which made Russell and Sydney martyrs. Like him, he prefers sensible simplicity to intense efforts of style. Among New-World authors he belongs to an elder school; he began to write before the latter-day style of Transatlanticism had developed itself,—and though he has chosen to relate brilliantly the Lives of the Caliphs, to discourse of the rich Alhambra, to paint the superb story of Granada and Spain, he enjoys his chief delight, and his chief success, in natural New-World sketches, portraits of American character, anecdotes of Washington, the plainest of heroes, the most magnanimous of men. Moreover, he is the historian of the discoveries of Columbus, and that is a title by which he might claim to be the historian of the virtues and prowess of Washington. There seems, at least, a peculiar fitness in the choice by Washington Irving, who has narrated elaborately and vividly the enterprises of the marvellous navigator—of the one great general of America—as the subject of his second large biography. In this book all his sympathies, personal, national, historical, are engaged. He writes of a man beloved by all his countrymen. He has nothing to conceal, to excuse, or to exaggerate.

In the first volume we are brought as far as the Battle of Bunker's Hill, and the acceptance by Washington of the command of the American army; in the second to the close of the Jersey Campaign, which had changed the whole aspect of the War, and decided the reputation of the patriot general; the third, carried on to the storming of Stony Point, leaves the crowning scenes of the conflict still to be described. It is of this volume, the last published, that our readers will be solicitous to hear. Of the first and second they already know the general characteristics. Mr. Irving's style is as free as graceful, as strongly marked by the character of his subject as it was in the history of Columbus; he is also candid, just, and calm, as all historical writers should be, but especially writers who undertake to recite for American and English readers the story of that war in which English encroachment was a source of offence to America, and American resentment a source of humiliation to England. The grounds of the original quarrel are discussed in a moderate and rational spirit; the case is described rather than set forth with all its incidents and aggravations. More than this would have been unnecessary. English writers have long ceased to vindicate the policy which led to the colonial Declaration of Independence, and American writers have ceased to taunt the nation which was so unhappy as to be governed by such a king as George the Third, and by such a minister as Lord North. We have begun to wonder, indeed, that under such a government instead of losing thirteen colonies we did not lose our place in Europe. But during the progress of the war all Englishmen were not Georges or Norths. There was Cook sailing in the Pacific,—there was Warren Hastings building up an empire,—there was Keppel fighting D'Orville, there was Elliot defending Gibraltar,—there was Rodney defeating the Spaniards and the French,—Coote encountering the impetuous Mahratta tide,—even in America there was

Cornwallis victorious at Camden Town, conquering the two Carolinas, and only checked by three armies in Virginia. For Englishmen, those were not altogether inglorious times.

But Mr. Irving's work will be read less as a political than as a personal history. It is, without pretence, a biography. The account of Washington's early life is copious and graphic. Washington was not intellectually precocious, yet his superiority was developed in many directions; he seemed to have keener instincts, a stronger will, a more balanced mind, than other boys. As to education, he appeared to have little inclination to it, and it appeared to have little influence on him. No hero was ever less pedantic. At a college examination he would have run great risks, but at twenty he was a complete man of business, and at twenty-five the best soldier in the colony. At school he learned to write with neatness and accuracy, and at home was addicted to the study of commercial, legal and social forms, and to athletic exercises. He had, also, an early love, a "morning star of memory," which long haunted his life and tempted him to the composition of sundry indifferent verses. Carey Fairfax, too, is suspected of having slightly disturbed his feelings. But at sixteen years of age he entered upon the career of a man, and, until the period of the opening of the first Congress, engaged in exploring enterprises, militia duties, and even political combinations. After the event at Bunker's Hill, and the assumption by Washington of the command conferred upon him by Congress, the incidents of the history follow one another in more rapid succession:—Howe, Clinton, and Burgoyne bring their well-appointed forces upon the scene;—the invasion of Canada is determined;—the Battle of Long Island succeeds the evacuation of the Hudson;—the conflict burns fiercer;—Washington, with increased powers, becomes, in the Jerseys, the Fabius of the war. Thus the second volume closes.

When the third opens Edmund Burke, in England, is announcing the failures of the American revolutionary party. "They cannot look standing armies in the face." "They are inferior in everything, even in numbers." "They may delay their ruin, but can never defend their country." While Burke was writing thus, the Howes, whom he had described as "in possession of and able to awe the whole middle coast of America," had been out-generalled, attacked, and defeated. They had been nearly driven out of the Jerseys, and were guarded by Washington from Morris Town. The States were not only in arms, but in a fever of patriotism. Yet the American general was surrounded by difficulties. He had, in 1777, almost a new army to raise;—hostile squadrons hovered near the coasts;—the temper of Congress was equivocal;—rivals were busily at work;—questions of rank were angrily disputed. In the midst of these harassing circumstances there were some encouragements. Conway had joined his camp from Ireland—Conway, at first so frank and promising:—

"A candidate of a different stamp had presented himself in the preceding year, the gallant, generous-spirited Thaddeus Kosciuszko. He was a Pole of an ancient and noble family of Lithuania, and had been educated for the profession of arms at the military school at Warsaw, and subsequently in France. Disappointed in a love affair with a beautiful lady of rank with whom he had attempted to elope, he had emigrated to this country, and came provided with a letter of introduction from Dr. Franklin to Washington. 'What do you seek here?' inquired the Commander-in-Chief. 'To fight for American independence.' 'What can you do?' 'Try me.' Washington was pleased with the curt, yet compre-

hensive reply, and with his chivalrous air and spirit, and at once received him into his family as an aide-de-camp. Congress shortly afterwards appointed him an engineer, with the rank of colonel. He proved a valuable officer throughout the Revolution, and won an honourable and lasting name in our country."

At this moment the British troops invaded the United States from Canada. They were 8,000 in number, with admirable appointments, a train of brass artillery, and officers of experience in the German wars. The evacuation of Ticonderoga and the opening of the lakes, having laid bare the frontier, seemed to expose New York, New Hampshire, and Massachusetts to invasion. It was not known whether the powerful British fleet had sailed southwards or eastwards, and Washington, halting near the Capes of Delaware, waited for intelligence from his generals. Israel Putnam, at Peekskill, was desired to ascertain whether Clinton was actually at New York.—

"The old general, whose boast it was that he never slept but with one eye, was already on the alert. A circumstance had given him proof positive that Sir Henry was in New York, and had roused his military ire. A spy, sent by that commander, had been detected furtively collecting information of the force and condition of the post at Peekskill, and had undergone a military trial. A vessel of war came up the Hudson in all haste, and landed a flag-of-truce at Verplank's Point, by which a message was transmitted to Putnam from Sir Henry Clinton, claiming Edmund Palmer as a lieutenant in the British service. The reply of the old general was brief but emphatic:—

"Head-Quarters, 7th August, 1777. 'Edmund Palmer, an officer in the enemy's service, was taken as a spy lurking within our lines; he has been tried as a spy, condemned as a spy, and shall be executed as a spy; and the flag is ordered to depart immediately. ISRAEL PUTNAM.

"P.S.—He has, accordingly, been executed."

Again, a volunteer, Lafayette, who almost forced himself into the American service, and to Washington's camp. There he saw the revolutionary troops reviewed:—

"Eleven thousand men but tolerably armed, and still worse clad, presented," he said, "a singular spectacle; in this parti-coloured and often naked state, the best dresses were hunting-shirts of brown linen. Their tactics were equally irregular. They were arranged without regard to size, excepting that the smallest men were the front rank; with all this, there were good-looking soldiers conducted by zealous officers." "We ought to feel embarrassed," said Washington to him, "in presenting ourselves before an officer just from the French army." "It is to learn, and not to instruct, that I come here," was Lafayette's apt and modest reply; and it gained him immediate popularity."

Yet Washington knew not what to do with him; for the young Lafayette, though scarcely yet a soldier, was eager to become a general. However, he was taken into confidence, and marched with his preceptor through Coventry.—

"As there had been much disaffection to the cause evinced in Philadelphia, Washington, in order to encourage its friends and dishearten its enemies, marched with the whole army through the city, down Front and up Chestnut Street. Great pains were taken to make the display as imposing as possible. All were charged to keep to their ranks, carry their arms well, and step in time to the music of the drums and fifes, collected in the centre of each brigade. 'Though indifferently dressed,' says a spectator, 'they held well-burnished arms, and carried them like soldiers, and looked, in short, as if they might have faced an equal number with a reasonable prospect of success.' To give them something of a uniform appearance, they had sprigs of green in their hats. Washington rode at the head of the troops attended by his numerous staff, with the Marquis Lafayette by his side. The long column of the army, broken into divisions and brigades, the pioneers with their axes, the squadrons of horse, the extended

trains of artillery, the tramp of steel, the bray of trumpet and the spirit-stirring sound of drum and fife, all had an imposing effect on a peaceful city unused to the sight of marshalled armies. The disaffected, who had been taught to believe the American forces much less than they were in reality, were astonished as they gazed on the lengthening procession of a host which, to their unpractised eyes, appeared innumerable; while the Whigs, gaining fresh hope and animation from the sight, cheered the patriot squadrons as they passed."

Here is a picture. Mr. Irving passes on to a somewhat critical notice of Jane M'Crea's history,—the circumstances of which were derived partially from her niece, "whom the author met, upwards of fifty years since, at her residence, on the banks of the St. Lawrence." The amended version runs thus:—

"In General Fraser's division was a young officer, Lieut. David Jones, an American loyalist. His family had their home in the vicinity of Fort Edward before the revolution. A mutual attachment had taken place between the youth and a beautiful girl, Jane M'Crea. She was the daughter of a Scotch Presbyterian clergyman of the Jerseys, some time deceased, and resided with her brother on the banks of the Hudson a few miles below Fort Edward. The lovers were engaged to be married, when the breaking out of the war severed families and disturbed all the relations of life. The Joneses were Royalists; the brother of Miss M'Crea was a staunch Whig. The former removed to Canada, where David Jones was among the most respectable of those who joined the royal standard, and received a lieutenant's commission. The attachment between the lovers continued, and it is probable that a correspondence was kept up between them. Lieut. Jones was now in Fraser's camp, in his old neighbourhood. Miss M'Crea was on a visit to a widow lady, Mrs. O'Neil, residing at Fort Edward. The approach of Burgoyne's army had spread an alarm through the country; the inhabitants were flying from their homes. The brother of Miss M'Crea determined to remove to Albany, and sent for his sister to return home and make ready to accompany him. She hesitated to obey. He sent a more urgent message, representing the danger of lingering near the fort, which must inevitably fall into the hands of the enemy. Still she lingered. The lady with whom she was a guest was a Royalist, a friend of General Fraser; her roof would be respected. Even should Fort Edward be captured, what had Jane to fear? Her lover was in the British camp; the capture of the fort would reunite them. Her brother's messages now became peremptory. She prepared, reluctantly, to obey, and was to embark in a large bateau which was to convey several families down the river. The very morning when the embarkation was to take place, the neighbourhood was a scene of terror. A marauding party of Indians, sent out by Burgoyne to annoy General Schuyler, were harassing the country. Several of them burst into the house of Mrs. O'Neil, sacked and plundered it, and carried off her and Miss M'Crea prisoners. In her fright the latter promised the savages a large reward, if they would spare her life and take her in safety to the British camp. It was a fatal promise. Halting at a spring, a quarrel arose among the savages, inflamed most probably by drink, as to whose prize she was, and who was entitled to the reward. The dispute became furious, and one, in a paroxysm of rage, killed her on the spot. He completed the savage act by bearing off her scalp as a trophy. General Burgoyne was struck with horror when he heard of this bloody deed. What at first heightened the atrocity of it was a report that the Indians had been sent by Lieut. Jones to bring Miss M'Crea to the camp. This he positively denied, and his denial was believed. Burgoyne summoned a council of the Indian chiefs, in which he insisted that the murderer of Miss M'Crea should be given up to receive the reward of his crime. The demand produced a violent agitation. The culprit was a great warrior, a chief, and the 'wild honour' of his brother sachems was roused in his behalf. St. Luc took Burgoyne aside, and entreated him not to push the matter to extremities, assuring him that, from what was passing among the chiefs, he was sure they

and their warriors would all abandon the army, should the delinquent be executed. The British officers also interfered, representing the danger that might accrue should the Indians return through Canada with their savage resentments awakened, or, what was worse, should they go over to the Americans. Burgoyne was thus reluctantly brought to spare the offender, but thenceforth made it a rule that no party of Indians should be permitted to go forth on a foray unless under the conduct of a British officer, or some other competent person, who should be responsible for their behaviour. The mischief to the British cause, however, had been effected. The murder of Miss M'Crea resounded throughout the land, counteracting all the benefit anticipated from the terror of Indian hostilities. Those people of the frontiers who had hitherto remained quiet now flew to arms to defend their families and firesides. In their exasperation they looked beyond the savages—to their employers. They abhorred an army which, professing to be civilized, could league itself with such barbarians; and they execrated a government which, pretending to reclaim them as subjects, could let loose such fiends to desolate their homes. The blood of this unfortunate girl, therefore, was not shed in vain. Armies sprang up from it. Her name passed as a note of alarm along the banks of the Hudson: it was a rallying word among the Green Mountains of Vermont, and brought down all their hardy yeomanry."

The Battle of Oriskany illustrated the qualities of that savage contingent against which the dying voice of Chatham protested. Besides the painted skins and yelling voices of the Indian auxiliaries, the most malignant passions of humanity were introduced to exasperate the strife.—

"The regulars attempted to charge with the bayonet; but the Americans formed themselves in circles back to back, and repelled them. A heavy storm of thunder and rain caused a temporary lull to the fight, during which the patriots changed their ground. Some of them stationed themselves in pairs behind trees, so that when one had fired the other could cover him until he had reloaded, for the savages were apt to rush up with knife and tomahawk the moment a man had discharged his piece. Johnson's greens came up to sustain the Indians, who were giving way, and now was the fiercest part of the fight. Old neighbours met in deadly feud; former intimacy gave bitterness to present hate; and war was literally carried to the knife, for the bodies of combatants were afterwards found on the field of battle, grappled in death, with the hand still grasping the knife plunged in a neighbour's heart."

The surrender of Baum—the fate of Burgoyne's advanced division—the battle of the Brandy-Wine—the levy of a new militia—the investiture of Washington with extraordinary powers—his retreat to German Town—the march of Howe into Philadelphia—bring us to another military scene enacted in that city. Lord Cornwallis entered it in triumph in August, 1777,

"with a brilliant staff and escort, and followed by splendid legions of British and Hessian grenadiers, long trains of artillery, and squadrons of light-dragoons, the finest troops in the army, all in their best array; stepping to the swelling music of the band playing 'God save the King,' and presenting with their scarlet uniforms, their glittering arms and flaunting feathers, a striking contrast to the poor patriot troops, who had recently passed through the same streets, weary and way-worn, and happy if they could cover their raggedness with a brown linen hunting-frock, and decorate their caps with a sprig of evergreen."

Jane M'Crea is not the only womanly name associated with the war. Who has forgotten Lady Ackland or the Baroness de Riedesel, who sought their wounded husbands on the battle-field?—

"When the army was on the march, they followed a little distance in the rear, Lady Harriet in a two-wheeled tumbril, the Baroness in a calash, capable of holding herself, her children, and two servants."

The march was along a wretched road on the west bank of the Hudson.—

"The division had with it eighty-five baggage-waggons and a great train of artillery, with two unwieldy twenty-four pounders, acting like drag anchors. It was a silent, dogged march, without beat of drum, or spirit-stirring bray of trumpet. A body of light troops, new levies, and Indians, painted and decorated for war, struck off from the rest, and disappeared in the forest."

While the battle was fought before the capitulation of Burgoyne's army, the Baroness de Riedesel sat in a neighbouring house, listening to the uproar. Dinner had been laid; General Fraser was brought in on a wheel-barrow mortally wounded, and the table was removed to make way for his couch. Every moment the Baroness expected to see her husband brought in similarly mangled. Meanwhile, Lady Ackland was in a tent near by.—

"News came to her that her husband was mortally wounded and taken prisoner. She was in an agony of distress. The baroness endeavoured to persuade her that his wound might not be dangerous, and advised her to ask permission to join him. She divided the night between soothing attentions to Lady Harriet, and watchful care of her children who were asleep, but who she feared might disturb the poor dying General [Fraser]. Towards morning, thinking his agony approaching, she wrapped them in blankets and retired with them into the entrance hall. Courteous even in death, the general sent her several messages to beg her pardon for the trouble he thought he was giving her. At 8 o'clock in the morning he expired."

Lady Ackland was taken prisoner. The Baroness de Riedesel and her children remained amid the horrors of the bombardment.—

"On the morning when the attack was opened, General de Riedesel sent them to take refuge in a house in the vicinity. On her way thither the baroness saw several men on the opposite bank of the Hudson levelling their muskets and about to fire. Throwing her children in the back part of the carriage, the anxious mother endeavoured to cover them with her body. The men fired; a poor wounded soldier, who had sought shelter behind the carriage, received a shot which broke his arm. The baroness succeeded in getting to the house. Some women and crippled soldiers had already taken refuge there. It was mistaken for head-quarters and cannonaded. The baroness retreated into the cellar, laid herself in a corner near the door with her children's heads upon her knees, and passed a sleepless night of mental anguish."

These are glimpses of war more suggestive than complex pictures. But Mr. Irving is more solicitous to draw a portrait of Washington in all the phases of his career than of lightening the narrative by anecdotal digressions. His estimate of the General's character is represented by one brief quotation, printed in capitals, from a letter in which Washington compares his own situation in the South with that of General Gates, the vanquisher of Burgoyne, in the North.—"If the cause is advanced, indifferent is it to me where or in what quarter it happens." That, says Mr. Irving, "speaks the whole soul of Washington." He was then in discouragement. His unavoidable failures were ungenerously contrasted with the accidental successes of others. Through several chapters the narrative touches continually on the efforts made to disparage his personal renown, and to diminish his influence with the army and with Congress. Unsuccessful as these were, they could not but obstruct his progress. Judge Jay, son of the celebrated Governor Jay, has communicated the following note to Mr. Irving:—

"Shortly before the death of John Adams, I was sitting alone with my father, conversing about the American Revolution. Suddenly he remarked, 'Ah, William! the history of that Revolution will never be known. Nobody now alive knows it but

John Adams and myself." Surprised at such a declaration, I asked him to what he referred? He briefly replied, "The proceedings of the old Congress." Again I inquired, "What proceedings?" He answered, "Those against Washington; from first to last there was a most bitter party against him." As the old Congress always sat with closed doors, the public knew no more of what passed within than what it was deemed expedient to disclose."

Among the methods adopted by Washington to restore and defend his power was the appointment of Baron Steuben as Inspector-General of the Army. Steuben, as is well known, had been one of Frederick the Great's aides-de-camp, had fought in the Seven Years' War, and was a knight of the Order of Fidelity. He engaged to train the American army.—

"It was a severe task at first for the aide-de-camp of the Great Frederick to operate upon such raw materials. His ignorance of the language, too, increased the difficulty, where manœuvres were to be explained or rectified. He was in despair, until an officer of a New York regiment, Captain Walker, who spoke French, stepped forward and offered to act as interpreter. 'Had I seen an angel from heaven,' says the baron, 'I could not have been more rejoiced.' He made Walker his aide-de-camp, and from that time had him always at hand."

The militia distressed him by their incapacity.—

"The men blundered in their exercise; the baron blundered in his English; his French and German were of no avail; he lost his temper, which was rather warm; swore in all three languages at once, which made the matter worse, and at length called his aide to his assistance; to help him curse the blockheads, as he was pretending—but no doubt to explain the manœuvre."

Sometimes, however, as he rode along the line, with the star of knighthood glittering on his breast, his triple store of curses failed.—

"On one occasion, having exhausted all his German and French oaths, he vociferated to his aide-de-camp, Major Walker, 'Vien, mon ami Walker—vien, mon bon ami. Sacra—G—dam de gaucherie de dese badauds—je ne puis plus—I can curse dem no more.'"

But his success was remarkable. The army began to move like a machine. Washington, whose enemies began now to wane, was enabled to resume active operations. France had declared for the American cause; the adherence of Spain and Holland was expected. Nevertheless, the British forces, largely recruited from Europe, still maintained their position along the coast, and at several parts of the interior; and the winter of 1799 closed in the midst of vicissitude and doubt.

The history, as related by Mr. Washington Irving, is so fresh that it seems almost new. Written with as much elegance as vigour, it is the best memorial that has been devoted to the name of Washington, the patriot venerated in both worlds.

Tales of College Life. By Cuthbert Bede, B.A. Clarke.

We have never been able to understand why nonsense should be supposed to be peculiarly "readable." And yet every fresh supply of it—issued under a gaudy cover—is held forth as deserving that especial praise. Some of the wisest are also the most entertaining writers; and that it is especially the case with the English humourists, that they have been solid, sensible, and instructive men. The small school of wags of our own time despise this wholesome tradition; but the worst of it is, that, while they have no solidity, they have very little fun.

We are told that the present "Tales" have appeared in "serials" in a "piecemeal" condition. How they read, in that state, we do not know,—but a meaner and poorer volume of

pleasantry we never came across. The first story—"Æger; or, Mistaken Identity"—is spun out of one of the stalest and oldest of college anecdotes. What the writer borrows he cannot use. He dishes it up in a hash of slang, bad puns, and "funny" verbiage,—the fun consisting in calling London "the little village"; a livery-servant a "canary"; and so forth. We should not find fault with Mr. Cuthbert Bede for not possessing the more serious qualities only found in writers of real humour and observation; but it is too bad that he should be dull even as a jester—unable to tinkle, though he wear the cap and bells. However, let us prove what we say from his book. Mr. Bede's hero is about to set off by rail,—

"But it ended in a less lively subject; to wit—(not that there was any wit in it)—Bradshaw. 'Now, let me see!' murmured the undergraduate, as he turned over the leaves of the bewildering book, and consulted its still more bewildering index. 'Oxford, W.S. 10; Gr. W. 53-57; L. and N.W. 75; O. W. and W.—the Old Worse and Worse,—77; Shr. and Ches. 86. Mid. Remarkably explicit and clear, certainly. Oh, here it is! Down-train—London. Express leaves at five fifteen; Blethley, six twenty-five; all right so far! only, this blackguard Junction—Oh, I see! departs from Blethley at six twenty-five; arrives at Oxford—why, confound it! it never arrives at Oxford at all! Oh! here's another train at seven fifteen; reaches Oxford at eight thirty. That's the ticket! that will just land me in time for Gates. So, to Town I go, and have a chat with Fanny.'"

Mr. Bede describes an English country gentleman:—

"The Old Boy had a highly-coloured, port-and-claret countenance, the radiant hues of which were shown off to the greatest advantage by the snowy colour (that is to say, if white is a colour) of his white neck-handkerchief, which appeared to have been wrapped round his neck a countless number of times, after an antique fashion. The Old Boy, being of a puffy, apoplectic habit of body, was not accustomed to ascend gradients, however easy, without a certain amount of stertorous breathing, that, for a time, proved a slight impediment to the freedom of conversation; and thus, when he encountered his son, he could only gasp, 'Why—why! Percie!' and was then compelled to stop short, and to lay his hand upon his son's arm to arrest his farther progress."

Mr. Bede delineates a street adventure:—

"As the driver made a sharp turn round the corner of Hyde Park Street, the cab came into collision with the van of a West-End laundress, which was proceeding on its homeward route laden with the heavy baggage it had collected in the Square. Now, although Hansoms are warranted to 'keep this side upmost,' and to preserve their equilibrium under the most trying circumstances, yet they are not exempt from those ills which cabs are heir to, when brought into sudden and violent contact with vehicles of larger growth and heavier burden; and it, therefore, happened that not only was a shaft of the cab broken, but that one of its little windows was burglariously entered by the pole of the heavy van; and, by these several means, the Hansom was brought to a standstill, and its horse to a downfall. It was fortunate for Mr. Percival Wyld that he was aware of the collision, and instinctively sprang from his seat; for, by this action, he avoided the blow on the head, or poke in the face, that the van-pole would undoubtedly have given him; in which case his adventures would, probably, have been brought to an unexpected termination, or would, at any rate, have been deprived of the chance of being faithfully illustrated with a handsome frontispiece."

In all these passages, who does not see the effort of a naturally dreary intelligence to mimic the inimitable mock-heroic and irony of Mr. Dickens's early manner,—and that, too, after it has been mimicked a thousand times? Yet, such as they are, these are the best passages to be found in Mr. Cuthbert Bede.

It is sufficient for our present purpose to show the poverty of this book in a literary point of view. But it is worth the while of those who

may be disposed to consider seriously the effect of all such books, to inquire whether their levity, vulgarity, and general irreverence do not tend to lower the standard of taste and feeling among the rising generation?

A Descriptive and Historical Account of Folkestone and its Neighbourhood. By S. J. Mackie, Esq. Folkestone, J. English; London, Simpkin & Marshall.

THE name of Folkestone was hardly known thirty years ago to the ordinary tourist, whose way to the Continent lay, if not by the river boats, by way of Dover to Calais. It is only recently that the name has become familiar. Folkestone is like a dignified mansion-house which has fallen into decay, been occupied by a crowd of poor tenants, and which, by a lucky turn of events, has again been served by fortune, repaired, enlarged, beautified, and endowed with something more than a promise of increasing prosperity. In the olden time, it lacked neither feudal lord, nor godly houses, nor Christian churches, nor adventurous men. There is many a stirring tradition in the district of events which have close connexion with these personages and things. Castle, convent, priest, man-at-arms, and aspiring burgher, there is enough and to spare to make a voluminous history, even when drawn from those old writers, of whom Mr. Mackie curiously says, that their "principal merits are their inaccuracy and perversion!" For a long time, the simple townsfolk were renowned for their Gotham-like ignorance and simplicity. We have heard that a portion of the town was once called "Turkey Town," to express the heathen-like darkness which there prevailed; and it was reported, when it was once threatened by a visitation from a contagious disorder, that the wise old men of the locality suggested that the malady might best be kept out by surrounding the town with a circle of fishing-nets. But the stories are innumerable of the old Folkestone follies, and some of them might well have found a place in Mr. Mackie's volume; for such stories are not without their uses, and belong indeed to the local historian's especial vocation. The ancient barbarism has not yet entirely died out in the place. It is not perceptible, perhaps, among the inhabitants generally, but it flourishes undisturbed and rampant in the Custom House. We will affirm, that in no other civilized country could such a scene be exhibited as that which takes place—or very recently took place—in the Custom House at Folkestone on the arrival of a crowded steamer from the opposite coast. The ingenuity of the authorities seemed taxed to put every possible impediment in the way of the weary traveller. He is lucky if he is not detained longer, however light his luggage, than the time consumed in travelling from the French capital to Boulogne; and still luckier, if he comes unscathed out of the fierce struggle,—the almost hopeless search for luggage, cast anywhere and everywhere, and from the trunks he tumbles over or pulls down upon him, when endeavouring to find his own, or to help some hysterical, bewildered, and sobbing lady. We have seen, over the water, twice the number of travellers quietly, comfortably, and decently passed, with all their luggage, in half the time occupied in the disgraceful cock-pit at Folkestone, where foreigners stand astonished and disgusted at the clamour, the shrieks, and the struggle, which convey to them the first impressions of England, when they go up to this Malakhoff of a "douane Anglaise." It is refreshing to turn from these facts to remember that near the spot where they occur the gentle physician Harvey meditated on his discovery of the circulation of the blood, and the

erudite Langhorne talked over, perhaps worked at, their translation of Plutarch.

The best portion of Mr. Mackie's volume is that devoted to the history of Folkestone. There is more interest in this than in the topographical details. We are glad to come upon such incidents as an alderman, like gallant Philpotts, capturing a fierce Scotch pirate, like Mercier,—a feat which is not likely to be repeated in our days, for obvious and happy reasons. We smile, too, at the record of the election of Mayors of Folkestone, which was once done "at the Cross in the churchyard," by the whole body of freemen, "each of whom was presented with a small gratuity on recording his vote." We are told, in a note, that the gratuity in question was 6d., while the burgesses who polled for the more important "worshipful" of Dover were recompensed with a liberal and "splendid shilling." Here is a sample of very smart debtor and creditor law in the olden times in the Cinque Ports:

"Amongst other documents in the town chest are some interesting letters of the time of Edward IV., from the Lord Clinton, the archbishop of Canterbury, and the duchess of York, about the installation of one Baines as prior of Folkestone; and in the minutes of proceedings numerous instances occur of the curious old Cinque Ports' customs, derived from the ancient Saxon laws, called the process of Wythernam, which was thus:—When a man of any of the ports or their members owed a debt in any of the others, the creditor stated his case before the mayor and jurats of his own town, who served letters of Wythernam upon the corporation of that where the debtor lived, and if after three notices, the mayor upon whom they were served did not see that the debt was duly paid, the first inhabitant of that town coming within the liberties of the port from which the summonses were issued, was immediately arrested, and his goods forfeited for the benefit of the claimant, or his person detained until due satisfaction was made."

In those days, a Folkestone man could hardly make holiday at Dover, unless he was quite sure that none of his townsmen had been unsuccessfully sued for the amount of bills owing at the latter place. What a check upon excursion trains would such a law be in the present day.

Reminiscences of Heinrich Heine—[*Heinrich Heine, Erinnerungen*]. By Alfred Meissner. Hamburg, Hoffman & Campe; London, Triibner & Co.

Herr Alfred Meissner, well known as a Republican poet of reddish hue, was in every way qualified to chronicle the last years of Heinrich Heine. He sympathized heartily with his literary labours, he loved him as a friend, and he was one of that very small circle which hovered about him in the course of his Parisian existence, and became gradually smaller as his end approached. The acquaintance between Heine and Meissner was not, indeed, of very ancient standing, as it did not begin till the February of 1847; but, nevertheless, it preceded the more violent outbreak of the malady that for many years prostrated the body of the satirist, while it left his mind intact, and hence it commanded what we may call a complete act of the tragicomic drama.

When first I became acquainted with Heine [says Herr Meissner] he was not the invalid whom we were accustomed to picture to ourselves a few years afterwards. His right eye was, indeed, closed, but any other trace of the late paralytic stroke was scarcely perceptible in his face,—a face, be it added, of remarkable beauty. The forehead was high and broad, the nose finely chiselled, the mouth delicately formed, and shaded by a beard that likewise covered the entire chin. This beard was already sprinkled with white, while the luxuriant brown hair of the head that hung down the back of the neck gave no indication of age. The general expression of his

countenance was that of a dreamy melancholy, but when he spoke or moved an unexpected energy and a sudden, almost demoniac, smile appeared. He still stood pretty firmly on his legs, and for the mere sake of reading an article in the newspaper, he would take the long walk from the *Faubourg Poissonniere* to the *Cabinet de Lecture* in the *Palais-Royal*.

The residence of Heine was marked by extreme simplicity, and suggested to Herr Meissner the reflection, that it was far inferior to that of a French writer of the second or third rank.

Three small rooms on the third floor were adorned with modest comfort, and the only prospect—if so it can be called—was a narrow, ill-lighted courtyard. The fire-place was of the ordinary white marble, and was surmounted by a large mirror, and a clock in a porcelain case, which, placed between a couple of those vases so indispensable in France, filled with artificial bouquets, ticked most audibly. In fact, this clock was the most striking ornament of the simple rooms, of which, indeed, there would be nothing remarkable to say, had not an old pock-marked negress, with a spotted silk handkerchief about her head, appeared in the opening of the doors as a servant, and had not the shrill cry of a parrot sounded at intervals from the chamber of Madame Heine.

The parrot, whose name was Cocotte, was a most important person in the *ménage*; and when the poor invalid, at a later period, took it into his head one evening to suspect that his wife, Mathilde, had run away from him, his jealous fears were suddenly calmed by the well-known shriek of the favourite bird. "The good soul," he exclaimed, "would never have gone away without Cocotte!"

The affection which Heine felt for his wife was of a deep kind, that some, perhaps, would hardly expect from a genius of such professed levity and extreme bitterness; but that will appear natural enough to all who reflect that an intense love for one or two objects is an ordinary concomitant of general indifference, and even of misanthropy.

When I take a general glance of every circumstance, and weigh one thing with another [says Herr Meissner], I cannot but believe that the poet loved his Mathilde more than any other being on earth. On the bed of sickness, while enduring the most intense agonies, his constant thought was how he should save her reputation before the world, and place her in a state of security. It was to him a source of perpetual grief that in the days of his prosperity he had not been sufficiently economical, and he now exerted himself to the utmost to make good his fault. For her alone he strained his remaining strength to labour, and every clause in his will bears testimony to an anxiety that extended beyond the grave. She was his doll, whom he loved to deck in fine clothes, in silks and satins, and whom he would gladly have adorned with the most beautiful things to be found in Paris. He sent her out to walk—despatched her to theatres and concerts—smiled upon her when she returned—and had no words for her but *bons mots* and terms of endearment. In his intellectual operations she had not taken any part; she had known nothing of his contests, but she had only lived through him and remained twenty years by his side. He often said with a laugh that she had never read a line from his pen. One might suppose that this annoyed him. On the contrary, it amused him. To Frau Mathilde, Heine was not the great poet that he was to the rest of the world, but he was what all the rest of the world denied him to be—the best, most affectionate, and most unreserved of men. With tears in her eyes, she—she, the laughing Frenchwoman—often narrated to me traits of her *Henri* that were the most touching proofs of a rare goodness of heart.

Another object of Heine's affection was his mother, whom he had not seen for many years,—of whom he never spoke to his ordinary acquaintance, but whom he has celebrated in his poem 'Nachtgedanken,'—and with whom he maintained a regular epistolary correspondence. Herr Meissner, who fancied that she was dead long ago, was surprised one evening at find-

ing that Heine was dictating a letter to her, and the following conversation ensued:—

"So, she is still living, the 'old lady by the Dammthor'?" (her poetical appellation).—"Yes," he replied, "old and sick and infirm, but with the same warm mother's heart."—"And you write often to her?"—"Regularly once a month."—"She must be very unhappy on account of your condition!"—"My condition!" echoed Heine; "oh, as for that, our mutual position is peculiar. My mother thinks me in just as good health as when she last saw me. She is old, and never reads a newspaper, and the few old friends who visit her are in the same situation. I write to her often, in as good spirits as I can, tell her about my wife, and say how well I am going on. As it is somewhat remarkable that the address alone is written by me, and that all the rest is in the hand of my secretary, I make her believe that I have a slight affection in the eyes that will soon pass away, and voluntarily refrain from much writing with my own hand. And thus she is made happy. *That a son could be so sick and wretched as I am in reality no mother could believe.*"

As Herr Meissner follows Heine through the course of his lingering malady, he does not make any discoveries that will change opinions as to the relation in which the poet stood to the large, serious questions of the world. As a thinker, Heine seems to have revealed himself to the public much as he revealed himself to his more intimate friends, and his sport with grave matters appears to have been kept up as much within his own bosom as on sheets of printed paper. But the veteran scoffer gains something like a halo of martyrdom from the fortitude with which he endured years of privation and physical agony,—and the revelation of the affectionate side of his nature by Herr Meissner will show that he was not the mere demon of malicious laughter and ironical sentiment for which so many have mistaken him.

The Camel: his Organization, Habits, and Uses, considered with reference to his Introduction into the United States. By George P. Marsh. Boston (U.S.), Gould & Lincoln; London, Triibner & Co.

The Congress of the United States of America recently determined to try whether the camel could not be used with advantage for military purposes, and appropriated a sum of 30,000 dollars for the importation of animals with a view to this experiment. Major Wayne and Lieut. Porter were entrusted with the duties of purchase and importation. These gentlemen came first to England, talked to Prof. Owen, and went to the Zoological Gardens. They then visited Paris and the Crimea in search of information from those who, in Algeria or India, had tested the qualities of the camel. They received highly favourable reports from General Simpson and from General Napier. Lieut. Porter likewise visited the herd upon the Grand-Ducal farm at Pisa. Having obtained, chiefly at Alexandria and Smyrna, above thirty animals of various breeds, they returned home, losing only one on the voyage, and landed at Texas,—the place which, from the climate and other circumstances, was thought most favourable for the purpose. Thus the experiment is now being made; and although no doubt the arrangements have not been managed with all the pomp and circumstance of Downing Street, it is reported that their boat was not unseaworthy,—that the camels were actually provided with provender—and, in short, that the animals were obtained and landed in good health at an expense of about 8,000 dollars; whereas, under our more perfect system, we should, no doubt, have had supplementary votes of money,—and, in all probability, no camels.

Mr. Marsh very naturally takes a warm interest in the success of this experiment, as

likely to increase the efficiency of the American army. In the present temper of his countrymen, it would, perhaps, be too much to expect us to see the matter quite in the same light. It is fortunate, therefore, that the interest of this book depends in a minor degree only on this military question.

The author, with a modesty not, perhaps, national, apologizes for his theme as being, "if not unimportant, yet humble," and disclaims all merit but that of fidelity in representing the conclusions at which he has arrived. We cannot think the apology necessary, nor, so far as we have a voice in the matter, allow Mr. Marsh to occupy that lowest seat which he has selected for himself. The great book of natural history, the Universe, does not contain a chapter more striking than that which is supplied by the subject of this treatise. Like the rest of that mighty volume, it is written in a character which is read with facility by the few only. The perusal demands patience, observation, sagacity. Those who, having acquired the power of reading Nature aright, transcribe it for the benefit of others who, from lack of knowledge or opportunity, cannot read in the original, confer no small benefit upon the public. Nor is the task an easy one. In treating of such matters, to avoid those commonplace reflections which occur to millions and have been published by thousands—to be original without being laboriously so—requires a freshness of mind by no means common. The author of this little book accomplishes these things. His aim is to set before the reader all the information he can give concerning the camel. Where he finds that others have well described what he wants to explain he does not steal their offspring, disguise them, and pass them for his own; but frankly owns their parentage. The following eloquent description he extracts from Volney:—

"At the return of the hot season every thing dries up, and the dusty grey earth offers only parched and woody stems, upon which neither the horse, the ox, nor even the goat can feed. In this state of things the Desert would become uninhabitable, if Nature, in the gift of the camel, had not bestowed upon it an animal of a constitution as hardy and as frugal as the soil is sterile and ungrateful. No creature exhibits so marked and exclusive an adaptation to its climate, and it would seem that an intelligent will had mutually accommodated the conditions of each to those of the other. Designing the camel to inhabit regions where he could find but a scanty supply of nourishment, Nature has been economical of material in his whole organization. She has not given him the fulness of form of the ox, the horse, or the elephant, but, limiting him to the purely indispensable, she has bestowed upon him a small head, almost without external ears, supported by a fleshless neck. She has stripped his thighs and legs of every muscle not essential to their movements, and has furnished his dry and meagre body with only the vessels and tendons required to knit its framework together. She has supplied him with a powerful jaw to crush the hardest aliments; but, that he might not consume too much, she has narrowed his stomach and made him a ruminant. She has cushioned his foot with a mass of muscle, which, sliding in mud, and ill adapted for climbing, unfits him for every soil but a dry, even, and sandy surface, like that of Arabia. She has condemned him to servitude, by refusing him all means of defence against his enemies. Possessing neither the horns of the ox, the hoof of the horse, the tusks of the elephant, nor the speed of the stag, how can he resist the attacks of the lion, the tiger, or even the wolf? Nature, therefore, to save the species from extirpation, has hidden him in the bosom of boundless deserts, whither no vegetable luxuriance attracts the beasts of the chase, and whence the more voracious animals are banished by the scarcity of their prey; and it was not till the sword of the tyrant had driven out victims from the habitable earth and chased them into the

wilderness that the camel became the slave of man. By his subjection, the most barren of soils has become a home for a portion of the human family; and such is his importance in the economy of Desert life, that his extinction would involve the destruction of the whole population of those arid regions, of whose nomadic existence he is the indispensable condition."

Mr. Marsh then gives a careful account of the anatomy, powers, and peculiarities of the camel, using freely all the information which the literature of the subject affords, and especially the writings of Ritter and Baron Hammer-Purgstall, but he constantly checks the statements of others by his own experience, which is considerable. This is the more necessary as many of the travellers who have treated this subject appear to have exercised rather largely the privilege of their class. The late French General Carbuca in particular must surely have been related to "Iagoo the great boaster," who

Never heard a marvellous story

But himself could tell a stranger;

at any rate, we feel much inclined to follow the example of the people of the village who listened to that worthy:—

"Kaw" we say, "we don't believe it!"

We will not attempt to give the substance of Mr. Marsh's book; for we think he has already compressed his matter into the smallest compass. To advert to the numerous uses of the camel—to enter into the varieties of species and breeds, the Arabian, the Bactrian, the swift Mahari, the beast of burden, who is often led by a donkey, as being an animal "of softer pace and easier guidance"—only to peep into the larder which he bears upon his back, or examine the cistern which he carries within him—to tell of his glorious independence as to grooming and feeding,—any one of these points might occupy our space.

Instead, therefore, of attempting to condense the conclusions at which the author arrives, we will select a few passages concerning life in the Desert and travelling in general, which, if the reader finds them as agreeable as we have done, will cause him to acquire a knowledge of Mr. Marsh's views from his own pages.

First, then, let us mount our beasts—a feat of no small difficulty, not at all like that performed by "young Harry with his beaver on." The author, it will be seen, discourages any attempt to "rise from the ground like feathered Mercury."

"The camel, as every body knows, kneels to receive his load and his rider, and the burden he can rise with is said to be the measure of what he is able to carry. The Bedouins often climb to the saddle, without bringing the camel to his knees or even stopping him, by putting one foot on the callus of the knee, and so clambering up by the neck and shoulder, but I recommend no such experiments to you. You will find mounting in the ordinary way ticklish enough in the beginning, and you run considerable risk at first of going off by a very illogical *à priori* or *à posteriori* movement as the animal rises. It is a 'bad eminence' to fall from, and until you have had considerable practice in this sort of slack-rope exercise, it is good to hold fast by the saddle-pins both fore and aft, while the dromedary is unfolding his joints, and working his traverse upwards. Further, see that your attendant keeps one foot on your camel's knee until you are well posited and balanced; for he is apt to start up on feeling the weight of his rider; and in this case you may very likely go up on one side and come down on the other. When all is ready, you give the signal, your Arab releases the camel, a sudden jerk from behind pitches you upon the pommel as he raises his haunches (for, as we told you before, he comes up stern foremost), and then a swell from the stem throws you aft, and so on, zig-zag, until he is fairly up, when, after a little more rolling, while he is poising and steadying, backing

and filling, and getting his feet into marching order, he steps off, and you are at last under way, on your quest for Mesopotamia, Arabia Petrea, or the Oasis of Jupiter Ammon."

Having achieved this feat, your next feeling will probably be one of regret that you did not leave it unattempted, for "the motion of the beast is a compound of rolling and pitching simultaneously executed," and frequently produces a feeling of nausea. How vainly in the presence of these facts does the Author of the 'Handbook for Travellers in Egypt' endeavour to prove that the glorious *sobriquet*, "The ship of the Desert," is incorrect. If it required support, the sea-sickness would be conclusive. All the wise men of the East shall not deprive us of our cherished phrase.

Having started on our voyage, let us cast an eye upon our crew,—and here we may remark that the following passage is the only one in the book in which the mode of thought reminds us that the author is a native of that country which, amongst other national sins of less enormity, has produced a Baruum. The business-like view which the writer takes of an Arab duel is amusing, but suggests a familiarity with bowie-knives, revolvers, and other Transatlantic arguments:—

"The Arabs were almost constantly at loggerheads among themselves. Their wars were chiefly of words, and it is incredible what a power of lungs they will exhibit on a question of two pence. While with them, we had among our own Bedouins, besides several minor and more informal set-to's and one general *mélée* in which the belligerents did little but push each other about, one regular *duello, dans les formes*, with swords. The dispute was about furnishing camels for the Hawajees, but I did not inquire into the precise point of difference. Why should I pester myself with the quarrels of Ethnicks? Nevertheless, I felt a good deal of interest in the result. I shall tell you why. One of the combatants had a short-bladed sword, true Damascus, with a chased silver hilt, which I had in vain tempted him to sell. But no, it had been his father's, and his father's, and so on back to Adnan, from whom all Bedouins are descended. I hoped that, in a certain event, his administrator would be less scrupulous. The champions were placed in the centre of a ring of Arabs, and when all was ready, 'winked and held out their cold iron.' After a little preliminary flourishing, they went at their good work in earnest. They poked, they cut, they thrust, and they parried, in tierce, in carte, and in sundry other curves not hitherto investigated by mathematicians, or the masters of the noble science of defence, until my friend of the short sword received a sufficient flesh wound in the leg, (alas! not mortal,) whereupon certain officious and pragmatical reformers then and there present interfered, and separated the doughty paladins, to the great scandal of sundry old Bedouins of the camp, who, one and all, declared that this un-called-for intervention was a most unwarrantable infraction of the ancient laws of honourable warfare, as understood and practised from time immemorial among the sons of Ishmael."

The author gives very minute and sensible advice concerning dress, diet, and the general management of a journey in the Desert, and his counsel is ever given in an agreeable vein. The following remarks concerning diaries are too important to be passed over, at a time when such part of the London world as is not on its travels is ready packed up to start:—

"And now that we have got well through our first day in the Desert, and are fairly out of sight of land, let me sit down on the shady side of the tent, and while our tardy dinner is preparing, talk over the experiences of the day, and write up our journals. And, here let me impress on the present reader, and I hope future traveller, the extreme importance of keeping a most full and minute record of every observation and every noteworthy occurrence. I have heard and read a great deal in my time on memories; and been told how, forsooth, people who can't read and write, and so make no notes, and don't relax

their memorial muscles by using artificial supports, and leaning on broken reeds of memorandum books and lead pencils, have much more retentive memories than those who avail themselves of such unnatural substitutes. Believe me, reader, 'tis all moonshine. You remember no whit the worse, and you observe vastly better, for the practice of full, clear, and accurate description. In travelling in strange lands, where all—nature, art, man—is new, the continual succession of novel objects is unfavourable for obtaining distinct and above all permanent impressions, and the most tenacious memory can hope to retain but a small proportion of the images received. It is wonderful how the perusal of a good book of travels over the same ground, or a glance at your journal, if reasonably full, will refresh and revive the fading pictures, which it has cost you so much time and toil to obtain, and scarcely any sacrifice is too great to secure an object so important. Let no excuse of lassitude, no impatience of the inconveniences of writing on your knee in the open air, with insects buzzing about your ears, and the wind scattering your papers and sanding your page before it is filled, deter you from conscientiously setting down everything that has struck you during the day as worthy of being seen. Trust nothing to the memory. Make no vague entries, such as 'fine scenery after sunrise,' 'remarkable rock far off to the right,' 'singular appearance in the sky this morning,' and so forth, foolishly imagining that you will remember the details, and have the energy to write them out to-morrow. Making a matter 'the order of the day,' for to-morrow, amounts, in congressional language and practice, to indefinite postponement. You will find, too late, that it has the same significance in your itinerant vocabulary. I once heard a motion to that effect objected to by a 'new member,' on the ground that to-morrow was Sunday. In your case, there is a more valid exception. 'To-morrow' will bring with it new observations to record, new inconveniences to surmount, new weariness to combat, and what is not worth securing to-day will have even less value to-morrow."

We advise our readers, at home and abroad, to peruse this book. We know that the weather is warm, that the seaside is a busy place, and that it is never so difficult to find time for anything as when one has nothing to do. But this is no ponderous blue-book, no mighty folio, no hypocritical little book with small print and double columns. It is a volume of about 220 pages which will go into a modern pocket, and is printed in a good large type. We do not think that three or four hours can be better spent than in its perusal.

To explain the peculiar style of the above extracts, it should be mentioned that the author has embodied in his book the substance of a lecture given by him at the Smithsonian Institution and extracts from an unpublished diary, which we take to be that of the author himself.

English Cavalry in the Army of the East. 1854 and 1855. Divisional Orders and Correspondence whilst under the Command of Lieut.-General the Earl of Lucan, K.C.B. Routledge & Co.

THE public, as well as "the service," will read this Correspondence with interest, perhaps with surprise. It explains much that appeared unintelligible in the history of the army of the East; and, if it does not reverse the tale of suffering and disaster, it transfers the responsibility in some cases from the individuals who have been popularly, bitterly, recklessly accused. Without attempting to discuss any problems of military law or necessity, we, in common with all careful readers, have a right to form an opinion upon documentary evidence. Two points, then, are clear:—first, that Lord Lucan from the moment of his assuming the divisional command was incessantly and solicitously engaged in watching over the condition of the cavalry; second, that strange difficulties were created in his way, by the insubordination of

certain officers and the neglect of others. Continually, from May, 1854, to February, 1855, he was circulating minute directions, inspecting whatever troops were allowed to be within his reach, reproving instances of omission, suggesting methods for promoting the comfort and safety of soldiers and horses. Continually, from June, 1854, to the date of his recall, he met with opposition which ought not to have been in his way. It is impossible to read the series of Divisional Orders, issued at Kulalie, Varna, the Adrianople Road, Stenescioi, Balaklava, and before Sebastopol, without perceiving that Lord Lucan daily exerted himself to preserve the order and diminish the sufferings of the Cavalry Division. He had, at starting, declared his views in a special order; but even as early as August, 1854, expressed himself dissatisfied with the general state of the regiments under his command.—

"The men are not cleanly in their appearance or in their persons; their clothes are unnecessarily dirty and stained; their arms, such as have come under the Major-General's observation, are not as clean as they ought to be; their belts, leathers, and appointments both of horse and man, are rusty and dirty; nor can it well be otherwise when, as it appears, the commanding officers of regiments are dispensing with the use of soap, oil, pipe-clay, blacking, chrome, and everything else, without which it is unreasonable to expect a dragoon to make a decent appearance. It would really appear as if the object were that every soldier on service should look as unsoldierlike, slovenly, and dirty as possible."

No language could be more emphatic, as indicative of his opinion and of his wishes. Yet, day by day, he was forced to reprimand acts of negligence, awkwardness, and stupidity. When horses were left unwatered or overworked, when materials were wrongly appropriated, when regimental duties were neglected, or carried on in a slovenly manner, he in all cases promptly noticed the matter. We are not aware whether a General of Division could have done more; but these points are connected with the personal history of the Russian War—with the history of conspicuous Englishmen—and as such they deserve attention.

But the most curious part of the Correspondence is that which illustrates the relations existing from the outset between Lord Lucan and Lord Cardigan. The former wrote from Kulalie: "When I was appointed to the command of the Cavalry Division, it certainly occurred to very many that the great difficulty would be to command Lord Cardigan." This, at least, is the difficulty exemplified here. The position, however, was simple enough: as Commander of a Division, Lord Lucan was, of course, entitled to authority over Lord Cardigan, as Commander of a Brigade. But Lord Cardigan insisted that his was "an independent and detached command"; and the result, after many painful letters, was an appeal to Lord Raglan. This is the decision, conveyed in dignified and friendly language, of the Commander-in-Chief:

"I have perused this correspondence with the deepest regret, and I am bound to express my conviction that the Earl of Cardigan would have done better if he had abstained from making the representation which he has thought fit to submit for my decision. I consider him wrong in every one of the instances cited. A general of division may interfere little or much with the duties of a general of brigade, as he may think proper or see fit. His judgment may be right or wrong; but the general of brigade should bear this in mind, that the lieutenant-general is the senior officer; and that all his orders and suggestions claim obedience and attention. The Earl of Lucan and the Earl of Cardigan are nearly connected. They are both gentlemen of high honour and elevated position in the country, independently of their military rank. They must permit me, as the Commander of the Forces, and I may say the

friend of both, earnestly to recommend to them to communicate frankly with each other, and to come to such an understanding as that there should be no suspicion of the contempt of authority on the one side, and no apprehension of undue interference on the other."

Lord Lucan, with this credential, may confidently submit the history of his proceedings in the East to public criticism. It must be repeated that the volume is of general, and not of personal interest only. The War will have its historians, and individuals will be judged as well as events, and every soldier has a right to enter upon the record his plea against misrepresentation and ill-usage. We should mention, additionally, that Lord Lucan publishes several new letters with reference to the Balaklava Charge, into which he was hurried by Lord Raglan's orders.

The Austrian Dungeons in Italy. A Narrative of Fifteen Months' Imprisonment and Final Escape from the Fortress of S. Giorgio. By Felice Orsini. Translated by J. Meriton White. Routledge & Co.

Felice Orsini is the son of a man who has been several times imprisoned "for his liberal ideas," and he is about thirty-seven years of age. He was admitted a member of one of the secret societies in the Papal States at the age of twenty-two, and since that time has been actively engaged in the several movements of the national party in Italy. Having been arrested in 1844, he was condemned to the galleys for life; but was liberated on the general amnesty, published by the present Pope soon after his election to the Papal chair. He was again arrested in the Duchy of Modena, through which he was passing on political business under a feigned name, but was set at liberty, and ordered to quit the state. He then assumed the names of Tito Celsi in Switzerland; and while busy about a national expedition, which failed, he was again arrested, but effected his escape. He next changed to Giorgio Hernagh, a Swiss, desirous of entering the Austrian army; but at Hermanstadt was apprehended, in pursuance of telegraphic instructions from Vienna, and was subsequently conducted to the fortress of St. Giorgio, at Mantua, from which he escaped. That the life of this Giorgio Hernagh, *alias* Tito Celsi, *alias* Felice Orsini, has been sufficiently active to supply incidents for a stirring tale few will doubt, but the present publication treats only of his last imprisonment and his extraordinary escape. The general question concerning the Austrian rule in Italy is here hardly touched. We have, on the one hand, an active conspirator, whom we are certainly not inclined to blame for his endeavours to displace his foreign rulers; on the other, a vigilant Government, only carrying out what is a necessary condition of its existence, in the punishment of conspirators. What can any government do with a man who, like the author's friend Calvi, frankly says that his constant object is to excite revolt, but hang him? We may hint, however, that if we were Austria's ruler, we should not wish for better friends to our power than those who, by embarking in crude and ill-considered plots, enabled us to frighten our discontented subjects with executions, or please them by the exercise of clemency at our pleasure. The mode in which political prisoners are treated by Austria appears then to be the only question fairly opened by this book. The course of a political trial by the Austrian authorities, as here stated, will perhaps be best illustrated to the English reader, by comparing it to a suit in a Court of Equity in the good old times when there were Masters in Chancery upon the earth. The papers are sent backwards and forwards between Vienna and the place where the inquiry is being

held. There seems to be proceedings analogous to our interlocutory applications:—examinations—reports—confirmations—rehearings. The affair is always moving, but never gets on. The fact that the Austrian process ends in hanging or the gallies, whereas the English one terminated in ruin or payment of costs, can create but a slight distinction between them; and the bastinado may fairly be set off against the ingenious interrogatories which the English defendant has to answer. But why does a Government so active as that of Vienna, unencumbered by a public, and not subject to conscientious scruples, play thus with its victims? Surely a cat-like pleasure in the sport cannot account for this? The truth would seem to be, that Austria likes to have on hand a number of subjects for the exercise of her severity or mercy, ready for use when the state of feeling among her people may require a display of either of these qualities. Besides this, by frequent examinations of her wretched prisoners, reduced as they are to physical, and often mental weakness, she gains much valuable information. The treatment of the prisoners is here described at length, and has before been set forth in the well-known narrative of Silvio Pellico. The *carcere durissimo* has, however, been abolished since the revelations made by the latter. Silvio Pellico was a very different person from the author, who has no taste for training spiders: the narrative of the former shows how a man may, by mental occupation, best "bear those ills we have,"—the present, how a determined man may, "by opposing, end them." The interest of the present work is in the view it gives of a clever and resolute man working his way over difficulties, apparently insurmountable, to life and liberty. The characters are drawn with greater fairness than might have been expected, where Austrian judges and jailers are the subjects, and an Italian prisoner the artist. The cunning with which Orsini lulls the suspicions of his keepers is amusing. His escape is so wonderful as to excite a suspicion of exaggeration: this, however, if the suspicion be correct, may very probably be unintentional. The whole narrative is interesting, and well told. In the translator's introduction is some very fine writing: those who do not care for very fine writing will do well to skip it.

OUR LIBRARY TABLE.

The Quadroon; or, a Lover's Adventures in Louisiana. By Capt. Mayne Reid. 3 vols. (Hyde.)—"The Quadroon" is a spirited novel, full of adventure, romance, and improbability. The descriptions of tropical scenery and of plantation life in Louisiana are excellent. They are brilliantly coloured, and have the freshness of out-of-door nature upon them,—that indescribable air of reality which is not to be obtained at second hand. Capt. Mayne Reid is perfectly at home in the scenes he describes. The graphic vividness of his descriptions obtains from the reader a certain favour for incidents and people utterly unlike any that were ever seen, except in some unusually romantic drama at Astley's Amphitheatre. The materials of the story are slight, and but roughly thrown together, indicating little labour and less pains,—but the charm of the local colouring is over all, and the reader is not allowed to pause to give more than a first glance. There is a lovely Creole, unmarried, the mistress of a fine plantation, but left under the guardianship of a wily, wicked treacherous lawyer,—whose sins are drawn out in detail. There is also a magnificent Quadroon slave, Aurora, who combines all the alluring beauties of a Mary Magdalen with the austere virtue of St. Ursula and all her companions rolled into one! The hero is a dashing young adventurer, who gives no account of himself, and, for anything that appears to the contrary, he may be an English nobleman fresh from college, a German student, or a scholar

from the École Polytechnique. He plunges into the adventures of the book after a course of dissipation at New Orleans, which has left him with exactly twenty-five dollars in his purse. Upon this small capital, however, he goes through the three volumes in gallant style, escapes all dangers, and carries off the prize at last,—besides effecting much poetical justice by the way, as all heroes of romance are in duty bound to do. It is rather warm work to read a novel which keeps the reader in perpetual motion during these dreadful days,—but those who wish for a book to read and not to sleep over, and who are not so unreasonable as to expect anything beyond mere amusement, may find their account in sending for 'The Quadroon.'

An English Chronicle of the Reigns of Richard II., Henry IV., Henry V., and Henry VI., written before the Year 1471, with an Appendix and Supplementary Additions from the Cotton MS. Chronicle, called Eulogium. Edited by the Rev. John Silvester Davies, M.A. (Printed for the Camden Society.)—The Chronicle, some portion of which is here given, is a version of that called the Brute. To the end of the reign of Edward the Third the variations are slight, and this part is not, therefore, printed. Subsequently the additions are considerable and interesting. Internal evidence appears to fix the date of this MS. between the year 1461, when Edward the Fourth began to reign, and the year 1471, when Henry the Sixth died. The MS. was at one time in the possession of Stow, and bears some short marginal notes and alterations in his handwriting. From him it passed to Speed, the chronologer, and afterwards descended, through the Speeds, to the present owner, Mr. John Speed Davies, the father of the editor. The nature of the MS., and the fact that it is in a private library, and, therefore, not generally accessible, render it a very interesting addition to the publications of this Society.

Post-Office Directory of Devonshire and Cornwall. The Maps engraved expressly for the Work, and corrected to the Time of Publication. (Kelly & Co.)—The object of this volume—a companion proper of the well-known 'London Post Office Directory'—is to record the local habitation and the name of every person in Devonshire and Cornwall. The agents of Messrs. Kelly & Co. have visited "every city, town, village, and hamlet throughout the counties," have catalogued the Cornish mines, classified the Devonshire and Cornwall trades, set forth a separate list of magistrates, and even distinguished by asterisks "those gentlemen who farm their own land." So that, from this provincial Directory, you learn not only how to address your letters and money orders (money-order information being elaborately appended), but you gain an insight into the social economy of the counties aforesaid. The references to population, religious sects, churches, chapels, schools, newspapers, insurance agents, trade, produce, parliamentary representation, railway lines, and public officers, seem to have been prepared with remarkable care. Much credit is due to every person who has contributed to the execution of this very useful work.

Memoirs of the Life and Times of John Carpenter, Town Clerk of London in the Reigns of Henry V. and VI., and Founder of the City of London School. By Thomas Brewer, Secretary of the School.—It is frequently an amiable, and generally a useful, feeling that leads men to overrate the dignity and importance of the institutions and persons with whom they are connected. The author is secretary of the school stated to have been founded by John Carpenter; he was formerly a clerk in that office of which Carpenter was for many years the head; and the mistake of this book is the supposition that Carpenter is a person in whom the public took an interest. The fact is that the subject has not even that interest which would attach to the circumstances connected with the foundation of a good school. John Carpenter died about the year 1442, and the City of London School was founded by Act of Parliament in 1834. The connexion between the so-called founder and the City School is very slight, Carpenter's gift was for the purpose of educating at schools and universities, and for maintaining four poor children.

The original income was small, but in 1833 it exceeded 900*l.* Until the Charity Commissioners made their report in 1823 the annual sum of 19*l.* 10*s.* only was expended for the charity purposes. Various alterations were subsequently made, and in 1834 the City of London School was founded,—the Carpenter property being charged with 900*l.* per annum for its support. The author appears to have searched diligently for records concerning his hero. That he was Town Clerk for twenty years,—compiled the book concerning the customs, &c., of London, once known as *Liber Albus*, but now become, from dirty fingers and the action of what passes for air in the City of London, *Liber Niger*,—and represented the City in Parliament, are facts which were known before. Little is added to that stock of information. That John Carpenter was a worthy citizen deservedly esteemed in his generation, we have every reason to believe,—that he was a person about whom it is worth while to write a book 400 years after his death we cannot think. The author gives some account of several persons who were, and of others who may have been, friends of John Carpenter, and adds a short historical sketch to show that the reigns of Richard the Second, Henry the Fourth, Henry the Fifth, and Henry the Sixth, were times of stirring interest. To the first-mentioned reign we are said to be indebted for that form of government in the City so much admired in the present day. The author has not been able to discover the original gift by John Carpenter to the City, nor any earlier mention of it than that in Stow's Survey. The distinctions obtained by pupils who have proceeded to the Universities, as stated in a list which accompanies this book, are highly creditable to the City of London School.

In *Memoirs of the Marquis of Montrose*, by Mark Napier, we have a reprint of a work long ago characterized by us [*Athen.* No. 687] as wanting in all the calmer elements which should furnish the historian for his task of discussing controverted points of history. In the present edition we notice the violence and zeal which vitiated the first impression for all save sectarian readers—a class less numerous now than it was a dozen years since.—The author of 'Paul Ferroll' has reprinted, with some additions, the *IX Poems by V.* which appeared several years ago, and have won for themselves popularity. They re-appear under their old title.—A second edition of Mr. Neale's *Pilgrim's Progress* by glorious old Bunyan,—but prepared by its modern editor for "the use of children in the Church of England,"—has been issued.—We may also announce the re-appearance, in the "Travellers' Library," of Mr. Rogers's paper on Fuller—which originally gained its share of public attention in the *Edinburgh Review*. It is accompanied and illustrated by a series of quotations of Fuller's various writings—forming a perfect treasury of wit and wisdom.—Mr. Bolton Corney has ably edited and annotated for the Hakluyt Society the very rare *Voyage of Sir Thomas Middleton to Bentam and the Maluco Islands* from the edition of 1606: a very useful contribution to a very interesting library.

LIST OF NEW BOOKS.

- Alford's Greek Testament, Vol. 2, 8vo. 18*s.* 6*d.*
 Barry's Introduction to Old Testament, Part 1, cr. 8vo. 6*s.* 6*d.*
 Beechey's (Lieut. R.) Good Soldier, 4*s.* 6*d.*
 Bentley's Wealth, how to get, preserve, &c. 4th edit. post 8vo. 1*s.* 6*d.*
 Bentley's Health & Wealth, how to get, preserve, &c. 4th edit. 8*s.* 6*d.*
 Bibliotheca Classica, Cicero's Orations, by Long, Vol. 3, 8vo. 16*s.*
 Castle's Elementary Text-Book for Young Surveyors, new edit. 6*s.*
 Chambers's Select Works, by Hanna, Vol. 9, 'Political Economy' 6*s.*
 D'Angelo's Memoir, Queen of Savoy, Life of, by Frey, 8th edit. 2*s.*
 De Bonnehose's History of France, by Robson, 2nd edit. 2*s.* 6*d.*
 Eastern Hospitals and English Nurses, 2nd edit. 2 vols. 2*s.* 6*d.*
 Feet-of-steps of Jesus, 2*s.* 6*d.*
 Gosse's Handbook to the Marine Aquarium, 2nd edit. 2*s.* 6*d.*
 Gosse's Manual of Marine Zoology for British Isles, Part 2, 7*s.* 6*d.*
 Granger's Battles and Battle-Fields of Yorkshire, new edit. 2*s.* 6*d.*
 Hamlyn's Lady Lee's Widowhood, new edit. post 8vo. 6*s.* 6*d.*
 Hannay's King Dabbs, new edit. 8*s.* 1*s.* 6*d.*
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[ADVERTISEMENT.]—REPORT ON THE STATE OF THE CROPS.—THE AGRICULTURAL GAZETTE AND GARDENERS' CHRONICLE OF THIS DAY, August 16, contains a full Report of the State of the Crops throughout the country. Order of any Newsvender. A single copy will be sent on receipt of six postage stamps.—Office for Advertisements, 5, Upper Wellington Street, Covent Garden.

MADAME VESTRIS.

By this well-known name—and not by that which for eighteen years she has legally borne as wife to Mr. Charles Mathews—must we announce the death of one of London's favourites, which took place at the close of last week. Her decease has been, for the Lady's self, a release, for her illness was a long one, accompanied with increasing physical agony.

The *Morning Post* gives fifty-nine as the age of Lucia Elizabeth Mathews, born (as the French would say) Bartolozzi. She came on the stage early—some forty years ago or more—and after singing awhile at the Italian Opera, was tempted to leave it for illegitimate drama and vaudeville on the English stage. Her character-hit (we are reminded by our contemporaries) was made in 'Giovanni in London.' Her song *par excellence* was 'Cherry Ripe.' After filling the print-shop windows and making a fortune for ballad composers for some halfscore years, Madame Vestris established herself as manager at the Olympic Theatre five-and-twenty years since. There she remained for some seasons of brilliant success, during which she may be said to have worked out a new style of entertainment,—in conjunction with such skilled writers as Messrs. Planché, C. Dance and Oxenford. There, too, she married Mr. Charles Mathews. Her subsequent career, as engaged in the managements of Covent Garden and the Lyceum Theatres, ended by a fatal malady, needs not be followed.

In theatrical annals Madame Vestris will be remembered for sumptuousness of fancy and taste in detail, rather than for any intellectual subtlety or high artistic finish as an actress. She may possibly have owed to her foreign origin those instincts which marked her career. As a girl, she was rarely bewitching, if not faultlessly beautiful—endowed with one of the most musical, easy, rich *contralto* voices ever bestowed on singer, which retained its charm to the last,—full of taste and fancy for all that is luxurious, decorative and gorgeous; but, perhaps not willing, perhaps not able, to learn beyond a certain depth. Thus, with every requisite for setting the opera "town" on fire, Madame Vestris never gained a very high place as singer in a musical theatre. Thus, with a public eager to praise whatever she said, smiled, or sang, Madame Vestris must be said to have sat at Comedy's "second table"—to have been inapprehensive in dialogue, flat in repartee, slow in conceiving character, as apart from *costume*,—and hence not to be remembered by any comic creation or impersonation. Thus, despite her remarkable personal fascinations, she cannot rank among the great mines—with Pallarini, or Elsler, or even Leroux,—women who, without speaking, have presented beings of the mind which will live in the annals of Drama. It was a certain instinct, we repeat, that saved Madame Vestris, and kept her for so many years in the full blaze of public favour. She managed to bring every incomplete gift into such play, that few cared to ask what, and how, was the spell that kept its owner "swimming" when more sterling folk were swamped. Without having mastered the singer's art, she charmed by her singing—the parts that she could not act she dressed superbly. She was unequal to the utterance of Shakespeare's poetical fancies—not elegant enough for Congreve—not sufficiently piquant for Sheridan,—but in *extrava-*

ganzas, burlesques, musical farces, she was so accomplished, sprightly and graceful, that the charm by which she held her public was hardly felt to be third-rate while she was in presence. Her taste in decoration of every kind was lavish, fantastic, but always harmonious. She was imperious, extravagant, exigent, in no common degree,—like one who from her girlhood had been used to suit and service,—the gratification of whose every idea of luxury had been encouraged, not balanced by prudential considerations. That she was considerate and kindly in her managerial rule and governance many an obscure person could now testify. She was tended in her long and weary illness by affectionate relatives and steady friends; and though she leaves behind her no great name in Drama, she leaves one which, by reason of its peculiarity, will not be forgotten.

ANGELI v. GALBRAITH.

THE Chief Justice of the Queen's Bench of Ireland has been engaged during five days at the Court of Assize at Athy in the trial of a cause, we believe unique in its kind, and which is of the highest scholastic interest. It appears that in the month of October 1849, one Signor Basilio Angeli, who had been engaged for some years in Dublin as a teacher of Italian, succeeded in obtaining the appointment of Professor of the Italian and Spanish languages in Trinity College, Dublin. In those days, no Civil Service Commissioners had set the example of testing the capacity of candidates for office by a searching examination. The applicant who could produce what are called the best testimonials, and tell the best story for himself, with, it may be, the help of a little private influence, was pronounced to be the best man; and under this process Signor Basilio Angeli was recommended by the Provost and Senior Fellows of Trinity College to His Excellency the Lord Lieutenant of Ireland, and obtained his appointment accordingly. Signor Angeli did not, however, remain long undisturbed. In the following month Signor Marani, one of the competitors for the Professorship, addressed a letter to the Board impeaching the correctness of the statements by which Signor Angeli had obtained his appointment, and also denying his competency. Some of the Junior Fellows, also, began to entertain strong suspicions that the right man was not in the right place. But modern languages were not then much studied. Signor Angeli was an inoffensive man, and supported by the Provost and a majority of the Senior Fellows, a request made by Messrs. Galbraith, Haughton and Ingram, three of the Junior Fellows, that certain documents might be examined in support of the charges brought forward by Signor Marani, was refused,—and things remained quiet until 1852, when it entered the mind of the Provost to confer on the Professor the honorary degree of LL.D. This proposal was evaded by an objection, on the part of Dr. Todd, on the ground of informality; whose real motive for opposing the proposition was a strong conviction that the intended honour was not deserved. In 1854 the Provost again proposed to confer the degree of LL.D. upon the Professor, and then it was that the three Junior Fellows above mentioned seized the opportunity of again pressing their charges against him, actuated by a laudable desire to protect the interests of their College, which they considered to be compromised by the continuance in office of one who, they contended, was not competent to discharge his duties efficiently, and who, they further asserted, had made statements in his application to the authorities which were not in accordance with the truth. The question of conferring the degree was, in consequence, suspended until these charges had been disposed of. In the mean time it was discovered that the Professor had been so imprudent as to write a book—"Oh, that mine enemy would write a book!" The unlucky Professor had written a book—or what was just as bad, he had translated into what he called Italian, and printed, Sir Robert Kane's Inaugural Address, delivered at the opening of Queen's College, Cork,—and a pretty mess the Professor has made of it.

The errors in this translation are of every possible description,—words which are not Italian—vulgarisms—faults in grammar—faults in orthography—mis-translations generally resulting in absolute nonsense—and all these so numerous that they commence with the second word of the title, and are to be found in every three or four lines of the text. "Inaugural address" is rendered *Discorso inaugurale* instead of "*Prolusione*." "Cavaliere" is spelt with two *l's*. "Dublino" is spelt *Dobbino*; and Hodges & Smith the publishers are called "*librajo*" instead of *libraj*. All this occurs in the title alone. With respect to the text, the Professor blunders in the very first line. Sir Robert Kane commences his Address by saying, "It is my duty now to open, for public instruction, the college which has been founded," &c. The Italian reads, "It is my duty now to open the college for public instructions founded," &c., as though "for public instructions" formed a part of the name of the college. A few lines further on, Sir Robert, speaking of the progress in Science and Art which the new university system was meant to subserve, says, "to which we must look in a great degree for the elevation of our country to the position amongst nations for which, from her geographical position and natural resources, she is so eminently qualified." This Signor Angeli translates, "And which we one ought to regard in great part as an instrument to raise our country to the rank of a nation," &c. This, surely, was "the most unkindest cut of all." Two lines further on Sir Robert says, "that it is felt to be of great importance is most fully testified by the attendance in this hall, henceforth to be devoted to the impartial estimation of intellectual power, of those who in this province and in this city, are most exalted in authority," &c. In Signor Angeli's hands this becomes, "that every one believes it to be of the greatest importance is fully evident by the numerous assembly of this Hall, destined for the future to the impartial judgment of the intellectual powers of those who in this province," &c. "The standard of humanity" is rendered "*lo standardo del umanità*." This reminds us strongly of the celebrated translation of the passage from 'Hamlet,' "He comes with martial stalk,"—"Il vient avec M. le Mareschal Stalk." Again, Sir Robert says, "this will be done more efficiently by the eminent Professors, the Deans of the respective faculties." The Professor is not contented with taking the English as he finds it,—he renders it, "this will be done, and more efficiently, by the eminent Professors, and particularly by the Deans," &c. "We have not forgotten," he translates "*let us not forget*." "The confidence you have shown" he renders by "*la confidenza da loro dimostrataci*," and "advisable" by "*plausibile*." "This college will constitute a member of the Queen's University" appears in Signor Angeli's version, "*questo collegio farà membro di Università della regina*," a translation the meaning of which we defy any Italian to understand. In Sir Robert Kane's speech he finds the words, "which only includes the licensed boarding-houses." Now, there is a very good word in Italian for a boarding-house, "*dozzina*"; but Signor Angeli prefers calling them "case di pensione"; and thus having written what is not Italian, but pure nonsense, proceeds to explain it by adding, "*ossia di pigione*," which, again is totally different from a boarding-house (*casa a pigione* meaning a house that is rented), and is not in the speech at all.

Having given poor old Ireland a quiet rap by making Sir Robert Kane point out the means by which she may be raised to the rank of a nation, he makes Sir Robert exalt himself in a manner no less extraordinary. Sir Robert had said, "the galaxy of mental power by which I have the honour to be encompassed,"—Signor Angeli says for him, "*the summit of mental power of which I have the honour to form a part*."

The Professor appears to despise grammar as much as he slight sense,—"*Il grado saranno conferiti*." A Frenchman of the *bas peuple* uses the verb in the first person plural, with the pronoun in the first person singular, as "*j'avons*." The Professor reverses the mode; he says "*noi si*

ricognoscere." Spelling likewise is a trammel which Signor Angeli throws off together with sense and grammar. The best description of this precious production was given by Prof. Gallenga, one of the witnesses on the trial, who, in the course of his evidence, said:—"After glancing at the pamphlet, I said, 'I see what it is; Sir Robert Kane has a daughter, who has received some few lessons in Italian, and by the help of a dictionary has been making English bewitched, and published it as Italian.'" And the best description of the nature of his blunders has been unwittingly given by Signor Angeli himself in the concluding passage of his preface to the answers to the thirty-one alleged errors, where he writes as follows:—"Signor A. would confess himself unworthy the professorship he has the honour to hold were he to omit.....disposing of them [the errors] in a manner which, he trusts, will enable the Lord Lieutenant and the authorities concerned to see that the alleged errors attributed to Signor Angeli are as groundless as they are unwarrantable." The Signor is right. No doubt he means that the charge of error is groundless and unwarrantable; but he has stated the truth without intending it:—the errors are, indeed, most unwarrantable and without justification.

With this extraordinary piece of Italian in their hands, the accusers of Prof. Angeli had easy work. They drew up thirty-one articles of impeachment, in the form of thirty-one gross blunders, amongst a great many more, alleged to exist in this translation. The translation, by desire of the Senior Fellows, was submitted to Mr. Panizzi, and pronounced by him to be worthless. The Professor, holding his appointment from the Lord Lieutenant, could not be dethroned, but the Provost and Senior Fellows stopped the supplies; in other words, they refused to pay him his salary. Signor Angeli was not inclined to submit without a struggle. He wrote another book in answer to these thirty-one alleged blunders,—not quite so bad as his translation, but then it is written in English; and he also brought an action for libel against Prof. Galbraith, by which step he has given his accusers an opportunity of saying and proving a great many things which, had he remained quiet, the world would never have heard of. The real question at the trial was, whether Professor Angeli was a man of education and understood Italian. He certainly did not succeed in persuading either the Bench or the jury that he was entitled to a verdict on either of these issues; but it is very certain that he has succeeded in proving to everybody else that he was not, and in addition that, when he stated as a part of his qualification that he had travelled in Germany and Spain, he stated that which was not true. Under other circumstances Prof. Angeli and his unlucky translation would not deserve a moment's notice, but as the work of one who puts himself forward as competent to discharge the duties of Professor in the University of Dublin it merits attention. It must be borne in mind that modern languages are no longer neglected at our Universities as they used to be,—they now take an important place in the curriculum of all colleges;—and a good knowledge of Italian, as was proved by the defendant Prof. Galbraith, is most necessary for those who are desirous of competing at the examinations for Indian preferment.

It has long been known that the system of granting appointments upon the faith of testimonials is a bad one. Carelessness—what is called good nature, but which would be more justly described as want of principle—private interest—the desire to repay an obligation or get rid of a bore—these are the prolific parents of recommendations which ought never to have been given, but against which it is extremely difficult for the dispensers of patronage to guard themselves. One or two trials, however, like that of Angeli v. Galbraith, and the system will take its place among the things that were. All honour to Dr. Todd and Prof. Galbraith, Haughton, and Ingram for the powerful impulse they have given towards this desirable consummation.

OUR WEEKLY GOSSIP.

GOLD, more gold! is still the cry from Australia. New fields of the precious metal have been lately found; new processes have enabled gleaners over the old fields to gather harvests more abundant than the first. Victoria—not long ago running rapidly along the road to ruin—is again prosperous, with a balance at its bankers instead of a deficit. Science, too, is labouring more and more in the gold region,—these after-discoveries having convinced the least fanciful that science may see deeper into the auriferous rock than the sharpest eye of the adventurer. A commission, under the care of Prof. McCoy, has been named by the Colonial Government to explore the entire gold measure of the colony, and report on its extent and probable richness.

The Astley Cooper prize of 300*l.*, presented triennially through the College of Surgeons, has this year been awarded to Dr. B. W. Richardson. The subject of the Essay was the Coagulation of the Blood. As Dr. Richardson gave an account of his researches at the Physiological Section of the British Association on Monday last, we are enabled to state that this Prize Essay contains the announcement of a very important discovery. The cause of the coagulation of the blood has hitherto been a mystery to physiologists. Dr. Richardson has demonstrated that the cause of the fluidity of the blood is the presence in the blood of the volatile alkali ammonia. This fact he has arrived at by a series of well-conducted experiments. The communication was listened to with the deepest interest by the audience; and, at the conclusion, drew forth the warmest eulogium from the President of the Section and the physiologists present. We shall publish an abstract of this paper in our proceedings of the Association, but we feel it due to our readers and the author of the paper to make known as early as possible the result of these interesting researches.

Lord Powis is announced to preside, at Welshpool, over the members of the Cambrian Archaeological Society, whose first meeting takes place this day, Saturday.

Some of our readers, on their way to the watering-places of Devonshire, will be glad to hear that a country congress of the National Reformatory Union will be held next week in Bristol, and will last from Wednesday to Friday. Lord Stanley will preside, and deliver an inaugural address. Excursions to various reformatories—such as those at Pynes, near Exeter, and Hardwicke Court, near Gloucester,—form an agreeable part of the programme.

The Museum formed by the Archaeological Institute at Edinburgh, gave so much satisfaction to the inhabitants, that a very general request has been made for the publication of an Illustrated Catalogue of its contents. Mr. Constable seems likely to be the publisher, and the profuseness of the illustrations will depend on the number of subscribers who come forward.

The following speaks for itself:—

Sunday Bands Committee, Cranbourne Hotel,
St. Martin's-lane, Aug. 13.

In reply to a query in the *Athenæum* of the 9th instant, relative to the "Subscription List for Sunday Bands in the Parks," I am desired by the Committee to state, that it is proposed at an early period to circulate a Report of their proceedings since the commencement of the movement, with balance-sheet of Receipts and Expenditure. The Committee are desirous of affording every publicity to the strict economy exercised by them in carrying out the intentions of the Subscribers; and they believe they will be enabled to show sufficient funds in hand to commence next season, and they trust that the listeners to, and admirers of, Music in the Parks, will, by their annual subscriptions, or the weekly purchase of programmes, enable them permanently to continue this means of innocent enjoyment to all classes on Sunday.

I am, &c. T. C. PRATT, Hon. Sec.

The Anniversary Meeting of the Ray Society was held during the meeting of the British Association at Cheltenham. It appears from the Report of the Council that they have now published their two great serial works, Agassiz's & Strickland's Zoological and Geological Bibliography, and Alder & Hancock's beautiful work on the Naked Marine Mollusca. The Report announced that the next work to be published is one by Prof. Allman, of Edinburgh, on the Fresh-water Polyps of Great

Britain. Several other works were also announced on various departments of British Natural History. Amongst them are Prof. Williamson's 'British Foraminifera,' Mr. Bowerbank's 'British Sponges,' and Mr. Blackwall's 'British Spiders.' The present is a favourable opportunity for joining the Society, as the Council are now issuing a new series of books, and the value and interest of their works in a scientific point of view can hardly be over-rated. The Report of the Treasurer showed a very considerable amount of unpaid arrears, which it is to be hoped will be speedily paid up.

A mishap has interfered with the progress of laying down the wires of the Mediterranean telegraph, which is to connect Sardinia with Africa. The cable is broken, and the end of it, for the moment, is lost. Mr. Craig, however, hopes to recover the wire, and to continue the immersion.

In our publication of July 19th we had occasion to notice, with favour, a biography of Alfieri by Mr. C. M. Charles. On the last day of that month the author died, in the thirtieth year of his age. He was the author of 'Claverston,' 'Arvon,' and some other tales, which found numerous readers.

The Council of the Royal Botanic Society of London report a pleasant state of prosperity. The present number of Fellows and Members is 2,107, of whom 154 have been elected since the last anniversary; the debenture debt, which in 1849 was 18,800*l.*, is now reduced to 11,625*l.*, the compositions for annual subscriptions being used to pay it off at the rate of more than 1,000*l.* per year. A considerable number of artists and students have been admitted to the Gardens, and upwards of 13,000 fresh plants have been supplied to illustrate the lectures of the Professors in various medical schools. The three trees moved last September are now growing, and likely to live. Four new Members of the Council have been elected:—Lord Belper, Sir Lawrence Peel, Bart., G. H. Foster, Esq., and J. Grote, Esq. The receipts for the past year have been:—From general subscriptions, 3,762*l.* 3*s.*; exhibitions, 4,935*l.* 9*s.* 6*d.*; lectures and miscellaneous sources, 71*l.* 7*s.* 6*d.*; redemption loan, 100*l.* Total receipts, 8,869*l.* Balance in hand, July 14, 1855, 3,080*l.* 5*s.* Grand total, 11,949*l.* 5*s.* The payments have been:—In bills and liabilities belonging to previous years, including exhibition awards of 1855, 2,163*l.* 5*s.* 6*d.*; in garden works, labour, tools, materials, taxes, and rent, 3,040*l.* 13*s.* 2*d.*; in printing, stationery, salaries, commissions, &c., 772*l.* 17*s.* 9*d.*; exhibitions and promenades, 1,942*l.* 10*s.* 9*d.*; repayment of debentures and redemption loan, 1,275*l.*; in payment of interest, 625*l.* 2*s.* 6*d.* Total payments, 9,819*l.* 9*s.* 10*d.* Balance in hand, July 15, 1856, 2,129*l.* 15*s.* 2*d.* Grand total, 11,949*l.* 5*s.* We are pleased to report so favourably of the Society which, in spite of increasing attractions elsewhere, have contrived to make their Gardens in the Regent's Park one of the most agreeable lounges in London.

Hildesheim, an old ecclesiastical city in the kingdom of Hanover, will receive this year the archaeologists of Germany. The meeting will be held in September, and the session last from the 15th to the 19th. A few English antiquaries will doubtless attend, either as representatives of the archaeological interests of our country, or for their individual pleasure and profit. Hildesheim, one of the most notable cities in North Germany, is now approached by rail from Hamburg and Cologne. An extra day, September 20th, will be given to a trip to Hanover—at an hour's distance by rail,—and especially to an inspection of the Museum of Antiquities, in which are deposited the rich collection of objects—Druidical and other—found in the tumuli of Hanover.

The American Association for the Advancement of Science will commence its Tenth Annual Session, at Albany, on Wednesday next.

An important contribution to the history of Wallenstein and the Thirty Years' War has just been published by Herr von Chlumetzky, Keeper of the Records at Brünn. It is a collection of 329 hitherto unknown letters by Wallenstein, 62 letters and transcripts by the Emperor Ferdinand the Second, and 26 letters by Romoald, Count Collalto, President of the Austrian War

Department in the time of Wallenstein. All these valuable documents were discovered in the records of the castle of the Collalto family, at Pirnitz, and are now printed for the first time in Herr von Chlumetzky's 'Regesten im Markgrathume Mähren.' The records of Pirnitz Castle contain, on the whole, about 3,000 letters of the official correspondence of Count Collalto, during the years 1620 to 1630. Of Wallenstein's letters, printed by Herr von Chlumetzky, 27 have been quoted by Hofrath von Hurter in his work, 'Zur Geschichte Wallenstein's,' and one has been printed in Herr Förster's 'History of Wallenstein.' As Collalto was a most intimate friend of Wallenstein, a great interest attaches itself to this correspondence, which may, not without reason, be considered as the confidential disclosure of Wallenstein's most secret thoughts and aspirations.

The original manuscript of Schiller's and Goethe's 'Xenien' has recently been published by Baron Wendelin von Maltzahn, the learned reviser of the late Prof. Lachmann's standard edition of the collected works of Lessing. This manuscript, it would seem, has been discovered only a few years back, and, coming into the hands of the late Dr. Eduard Boas, (one of the most ingenious, accomplished, and painstaking interpreters of the 'Xenien,') after the publication of that gentleman's excellent literary monography, 'Schiller und Goethe im Xenien Kampfe,' it could no more be used for that work, and is now for the first time presented to the world by Baron Maltzahn, the surviving friend of Dr. Boas. It leaves no doubt as to which of the 'Xenien' were written by Schiller, and which owe their origin to Goethe; and contains, besides, forty-one 'Xenien,' which are printed now for the first time.

Herr Ferdinand Gottfried von Herder, at Alsbisheim, a grandson of the German poet and philosopher of that name, has entrusted Prof. Düntzer, of Cologne, with the publication of the most important portion of his ancestor's literary and private correspondence. The selection will comprise three volumes, the first of which is to contain Herder's correspondence with Goethe, Schiller, Klopstock, Lenz, Jean Paul Richter, and Claudius. In the second volume, letters by Lavater, Jacobi, Mendelssohn, Haman, G. Forster, and Zimmermann will be found; and in the third the correspondence of Herder with Mdlle. Caroline Flachsland, afterwards his wife, will prove the chief attraction. The letters of Goethe (some of them written in the freshest time of his youth, from 1771 to 1772), are said to be of peculiar interest. The three volumes, of about thirty sheets each, will be published before the end of this month, and are eagerly expected by the German public. There can be no doubt but that they will add considerably to our knowledge of the classical period of German literature.

The 'Mémoires du Duc de Saint-Simon' are to appear in a new edition: editor, M. Cheruel; publisher, M. Hachette, Paris. The former editions of these celebrated memoirs were so disfigured by errors and misprints, that this new edition cannot but be welcome. Much paradoxical nonsense that had been given to Saint-Simon has been removed by M. Cheruel's prudent and clever criticism. The preface to the present edition has been written by M. Sainte-Beuve.

When speaking last week of the Vernet trial, we called attention to the unsettled state of French law, in permission, or prohibition, of the publication of correspondence and MSS. A matter of greater importance than the painter's letters from Russia has been in suspense this week,—namely, the attempted suppression, by the heiress of the Abbé Lamennais, of such correspondence, by the author of 'Paroles d'un Croyant,' as does not suit her orthodoxy,—the Lady belonging to the strict Catholic Church. It was argued, on the other side, that the dying controversialist had been harassed with attempts, made in his last illness, to induce him to recant, and, by express directions to those who watched his death-bed, had provided against any such tampering, selection, or other management of the papers as might suit those who held opinions counter to his own. The Court decided

in favour of open publication, and against the parties who attempted the restriction.

BRITISH INSTITUTION, Pall Mall.—The GALLERY, with a collection of PICTURES by ANCIENT MASTERS and DECEASED BRITISH ARTISTS, is OPEN daily, until Saturday, August 30, from Ten to Six.—Admission, 1s.; Catalogue, 6d.

FINE ARTS

NEW PUBLICATIONS.

The Chalk Waggoner of Limousin. By Rosa Bonheur. Engraved by E. Goodall. Gambart & Co. This line engraving, by Mr. E. Goodall, after Mdlle. Rosa Bonheur's picture, 'The Chalk Waggoner of Limousin,' is remarkable for brilliancy, and especially as showing the skilful treatment of a simple subject by the artist. Two waggons, drawn by a couple of cart-horses, are seen advancing down a steep hill, and may be fairly quoted in justification of the old criticism, oftentimes laughed at, of a foreshortened figure, which seems to turn to whichever way the spectator looks at it. It seems to illustrate the eyes of Fuseli's *Ghost in Hamlet*, Caravaggio's *Gorgon stare*, and the *Ass* painted by Gozzoli, which is so particularly noticed by Vasari in the life of that painter.

The Educational Question: a Caricature. M'Lean. This is a clever political squib of the H. B. school; but such things soon grow out of date, and scarcely keep longer than your garden flowers. The likenesses here are good, and the style is clever and touchy, like that of the old masters of early lithography, some forty years ago, when men used to try and give a sort of epigrammatic smartness to the stroke of the lead-pencil.

"Suffer Little Children to come unto Me." By Hon. G. Boscawen. Parker.

This is a rather feeble, but pretentious, coloured Scripture print, designed with the best intentions. It would be very good Art were intention sufficient in Art to secure the performance. It is astonishing how far a little drawing goes among amateurs, who know nothing of the severe laws which rule the human form. No shin bones, no knees, and doughy fingers, are all received with applause by friends who do not know when to admire, and could look at Raphael unmoved, while they would gape and grin before the childish imitation of Gerard Dow's onions or the brass pan of Teniers, who would, honest old soul, have despised the admiration of such critics.

FINE-ART GOSSIP.—The new picture recently placed in the first left-hand room of the National Gallery is by Benozzi Gozzoli, a celebrated pupil of Angelico da Fiesole, best known by his brilliant frescoes of twenty-four scenes from the Old Testament in the Campo Santo at Pisa. It is a large square altar-piece, which, according to the original contract published at Florence, had predella subjects connected with it also. From the same document, we learn that the picture was executed in 1461-2 for the altar in the Church of the Brotherhood of San Marco. It represents the Madonna and Infant Saviour, seated amidst a company of saints and angels, two of whom, St. Jerome and St. Francis, kneel in front. Angels immediately surround the Madonna; St. Zenobius, and St. John the Baptist; represented bearded and holding a processional cross, instead of the usual staff and scroll, stand behind St. Jerome to the left. On the right, behind St. Francis, stand St. Peter, clothed in the pallium, holding the keys and book, on the edge of which is written, "Tu es Christus filius," and St. Dominic, bearing his usual emblem, the lily. The lily springs out of the ground before St. Francis. The general effect of the picture is that of an enlargement of one of Fiesole's miniatures, especially in the draperies; but the heads are inferior in modelling. The features are heavy, and, above all, the eyes are deficient in expression. We have a means of comparing both master and pupil on a large scale by referring to Angelico's magnificent fresco of the Crucifixion, in the Chapter-House of San Marco at Florence, where he has assembled so many figures, each of them at least the size of life.

The kneeling figures of St. Jerome in both paintings have considerable resemblance. The Infant Saviour is round and heavy in form, with very yellow hair;—the face of the Madonna is enveloped in a pale blue hood, with a star on it, in reminiscence of the Byzantine form. A red and gold curtain is stretched behind the figures as high as the shoulders; but above this may be seen a Florentine garden and bright blue sky. There is a profusion of gold upon the dresses; and each figure has a flat circular gold nimbus, with the name inscribed in black letters. St. Peter is perhaps the nearest approach to the earnestness of Angelico; but the excellence of the small pictures embroidered on the border of the mantle of St. Zenobius deserves particular attention. The profile head of St. Peter, in that little compartment representing Christ's Charge and the Miraculous Draught, is full of Angelico's power; and the drapery of a standing figure in the composition of the 'Presentation of Mary' is quite in the style of Filippo Lippi. They seem really in advance of the rest. This is an important addition to the museum department of the National Gallery, and addresses itself especially to those who are interested in the history of Art. Gozzoli's works on such a scale are scarcely to be looked for out of Italy, and this specimen is, moreover, the very picture mentioned by Vasari. Even technical artists may perceive the value of earnestness of purpose and the advantage of painstaking in such a crude work as this; for they are qualities which even the most powerful style and dashing execution can never compensate for or even endure without.—Near this picture has been hung the fine specimen of Lo Spagna, which was purchased for 620 guineas, from the Orford Collection at Wolverton [see *Athenæum*, No. 1497]. Its silvery tones are here seen to great advantage; and this production of the fellow-pupil of Raphael may be studied very profitably by modern colourists.—A picture by Pietro Perugino, the master of the last-named painters, will be hung up in the Gallery to-day. Our opinion will be recorded at the next opportunity.

We are requested to state that the Mixed Fabric Court at the Crystal Palace was designed by Messrs. Barry and Banks—not by Sir Charles Barry—as is stated in Mr. M'Dermott's 'Guide to the Crystal Palace,' and inadvertently copied into the *Athenæum* a fortnight ago.

As long as silversmiths like Messrs. Hunt & Roskell are wise enough to engage the services of so great a sculptor as Mr. E. H. Bailey we may expect great works from their shops, and not mere gross lumps of brute silver, fit only to be given to oily directors by greedy railway shareholders. The Goodwood Plate this year consists of a group in silver representing the generous Alfred ordering the release of the wife and family of Hæsten, a Danish chieftain, after the rout of the black-bannered sea-king at Bemfleet, in Essex, where the bearded Saxon met the children of Thor and smote them with a grievous slaughter. Though not very elaborate in modelling, the work is a good bold work,—the attitudes are free and natural, the expression is honest and true. Convention requires a horse and sets other limits, but within these Art has worked creditably and produced fair results. The king is thoroughly Saxon, according to book, with proper cross-gartered legs like a royal Malvolio. The attendant to the right is kept down into insipidity, in the timid fear, we suppose, of his deducting from the notice spectators should give to Alfred were any one else thoroughly finished. This is what makes the portrait-painter give us clouds instead of hands.

MUSIC AND THE DRAMA

ADELPHI.—Mr. and Mrs. Barney Williams continue attractive; and the American pieces with which they are connected meet with a certain sort of approbation,—one more related to their novelty and adaptability to these unique artists than their dramatic merits. Mrs. Williams's "Yankee Gal" has certainly planted its type in the public mind, and been accepted as an amusing variety of the theatrically ridiculous. A more recent piece entitled "Our Gal" appears to have been intended to

present Mrs. Williams in more elegant American comedy; but as the young lady in the play, in order to rid herself of a disagreeable match, affects the vulgarity of an uneducated romp, we have, in fact, little more than a repetition of the old character slightly modified. A new piece in two acts produced on Monday, and entitled 'Irish Assurance and Yankee Modesty,' is evidently designed to exhibit Mr. Williams as the Hibernian, and subordinates the female part, which is accordingly a comparative sketch suggestive of the fuller portraits already given. The character assumed on the present occasion is that of a thoroughly wild Irishman, taken into service concurrently with as wild a Yankee "help"; and these between them contrive to throw a respectable American family into the utmost confusion. *Pat* is mixed up in all manner of humorous intrigues, imitating several, out of the abundance of his own imagination, and fights his way through them by means of his national blarney and natural cleverness. To great richness of brogue, Mr. Williams unites remarkable vivacity of temperament; and his assumption of this extreme phase of the Irish peculiarity is likely to rank amongst his most popular impersonations.

MUSICAL AND DRAMATIC GOSSIP.—The fascinations of Mdlle. Piccolomini, which have led to the announcement of yet three more "last farewell nights" of cheap opera at *Her Majesty's Theatre*, have also called down notice graver than such as mostly falls to the lot of the prettiest *prima donna* who can not sing. This has taken the form of a general search into stage moralities, and an especial broadside launched against 'La Traviata,' by sundry contemporaries. These have asserted, without chance of contradiction, that neither Signor Verdi's music (which is Signor Verdi's poorest), nor Mdlle. Piccolomini's singing (which every one concedes is on a very small scale), have made the fame and the *furore* of the opera and the Lady; but the unwholesome and objectionable nature of the story, and her liveliness in working this out. Accordingly, they have fulminated against the abomination itself, and against the audiences who

first endure, then pity, then embrace, such abomination. The thunder has not been unjust, we think, in this individual case. The music of 'La Traviata' is trashy; the young Italian Lady cannot do justice to the music, such as it is. Hence it follows that the opera and the Lady can only have established themselves in proportion as Londoners rejoice in a prurient story prettily acted. But is so sudden a wakening-up of censorship altogether fair? Granted that 'La Traviata' at *Her Majesty's Theatre* has been the poorest music, poorly sung, which has been allowed to pass for the sake of its "dear improper story,"—that it is not the only opera having a morbid *libretto* our opera history for the last quarter of a century must prove. What, moreover, have our play-translators, play-managers, play-actors, and play-critics been about? There has been, of late years, a determination to import and to enjoy the worst things of the foreign stage,—things unredeemed by pretext of historical truth or poetical idealization; and against this, wherever the scene or whoever the offender has been, this journal has on principle protested. But the protest has been, in many cases which could be specified, a motion merely supported by its maker; and glad as we are to recognize any disposition to try opera as opera,—which means, not as an affair of story,—not as a case of favour or disfavour to this or the other manager,—but as a composition of drama-music, playing, singing, the best that can be purveyed,—we cannot but ask how far the late movement against 'La Traviata' is spasmodic,—how far sincere; and if spasmodic it be, how far it will do good? A sanitary movement to be efficient must not be confined for a single week to one solitary *Folly Ditch* or *Goose Green*. Draining, white-washing,—the cleansing of cess-pools, and trapping of sewers, must not be accidental processes, but as much part and parcel of the system of every orderly citizen's life as attention to personal cleanliness. The only immediate results of the late outbreak of indignation

have been, the long essay on the dramatic art the other day contributed to the *Times* by the manager of *Her Majesty's Theatre*, in which he assures the public that on principle he forbore from purifying the *libretto* of 'La Traviata,'—in order not to impair the lovely lessons of faith, hope, and charity which the opera teaches;—and the advertisement of Mdlle. Piccolomini, as a young Lady capable by her good acting of carrying off a bad story and poor singing.

There has been no lack of variety in the Surrey Garden concert-bills. The evening of Wednesday last was devoted largely to Mendelssohn's music. His 'Lorelei' *finale* was sung, the *solo* by Madame Riedersdorff,—some of his part-songs, also, under Mr. Land's superintendence. Among the younger performers, M. Demunck, as a promising aspirant on the *violinello*, claims a word of notice. A second mention is due to Miss Kate Ranco. She has an agreeable, if not a powerful, *mezzo-soprano* voice, well trained, so far as its training has gone; what is more, she has a refinement of manner which is too rare among beginners;—the two promising a choice singer of the choicest music, if her further studies be well directed,—which means, not hurried.

The 'Winter's Tale' will be performed for the 100th night at the Princess's Theatre about the 20th of August. Early in September 'Pizarro' will be produced, selected, very possibly, to afford a contrast in its barbaric richness to the antique refinements of Sicily and Asia Minor. This novelty will be relieved by the 'Midsummer Night's Dream,' in which the "shadows" are expected to have a wonderful effect. By these arrangements Mr. Kean seems determined to carry his illustrations to all countries and all periods, and will have given an epitome of the world ancient and modern, places and costumes of the most opposite nations, with leading historical characters, provided his term of management be extended, which at present is understood to be limited to three years longer.

Mr. E. T. Smith announces the re-opening of Drury Lane in September. Among the engagements, he mentions the Keeleys and Mr. Charles Mathews, and, mainly, an American actress, Mrs. Emma Waller, respecting whom puffing arrangements on an extended scale are in progress. We trust that this Lady has the talent which speculators are interested in asserting; but cannot approve of the means adopted to impress playgoers of the fact.—The Lyceum will open about the same time, under the management of Mr. Charles Dillon, and a company presenting many features of excellence and novelty.

Among other rumours of the time, is one confirming Mr. Gye's tenancy of Drury Lane for his next season of Italian Opera, on the ground that his new theatre cannot be completed by next spring, by reason of its magnificence. The tale goes on to say, that the site will not be Covent, but Burlington, Garden, and that the building is to comprise a superb concert-room,—this with St. James's Hall only a few paces distant. Are we to have too many public rooms in London,—and not in London only, but in every great town? Manchester is "up and doing" to have the largest public room of all. To calculate on the increase of our public is impossible to those who have watched the growth of musical taste—rapid as the fairy bean-stalk—during the last quarter of a century; but we wish that players, singers, and composers grew in anything like a modest proportion to the audiences whom it now seems not impossible to gather.

On the last days of last week there was organ playing by Mr. H. Smart and Mr. Best at Messrs. Gray & Davison's factory. The instrument operated on was one just completed for another new Music Hall, which has been just built in Birmingham. It is to be opened, we observe, in the week betwixt the Bradford and Gloucester Festivals, by a music-meeting of four performances,—'The Messiah' and 'Elijah' on two mornings, and in the evenings of the same days two grand miscellaneous concerts. Mr. Mellon is to conduct,—the band is to consist of "the members of the Orchestral Union," with additions,—and the singers

engaged are Mesdames Clara Novello and Weiss, Miss Dolby, Messrs. Sims Reeves, Montem Smith, Thomas, and Weiss.

News from Paris this week resolves itself into an "account of empty boxes" at the opera-houses, caused by the fierce *comet-climate* of this August, which tempts the few people left in the city out to the "Pré Catalan" in the *Bois de Boulogne*. This is a new summer garden, where a *ballet* is danced, as the story of *Pyramus and Thisbe* was acted, in a real garden among real bowers. How everything returns! When we were in the deserted gardens of Herrenhausen, near Hanover, some autumns ago we were shown a theatre, amphitheatrically arranged, with grass seats, and the stage, with its wings, proscenium, &c., all nicely provided for by the topiarian art. There, the thing was exhibited as an old-world garden curiosity "run to seed," analogous to those of the Gloriet at Schönbrunn, or the Grand Duke of Modena's Palace (now a silk factory) at Varese. Now we have it trimmed back into a new life and new occupation, in the moral public garden of Paris,—for the "Pré Catalan" is, like our own Surrey Gardens, aimed at gentility and domesticism, "promiscuous dancing" not being allowed there.—Beyond this *out-of-town* freak or fancy, the novelties in Paris are not many, nor are the expectations brilliant. Signor Verdi, however, is again in Paris, which looks like "business";—M. Meyerbeer is just beyond the frontier at Spa;—Signor Rossini has been walking about at Wildbad, and once again pleasantly advertising his utter retirement from all effort, except criticism of his successors, by describing himself to a stranger who was presented to him as an "old piece of *rococo*." The promises, meanwhile, of a new opera by MM. Lockroy and Maillart, forthcoming at the *Théâtre Lyrique*, in which Mdlle. Juliette Borghese is to try her fortune,—and of Mdlle. Andersen as a young Danish Lady, who might be acceptable to the *Grand Opéra* if she spoke French better, are merely so many *day-day* rumours—good for little, except it be to cool impatience.

A Correspondent sends us the following correction of a mis-statement copied from the foreign journals.—"The musical composer, Herr Peter Cornelius, mentioned in your 'Musical and Dramatic Gossip' of last week, is by no means, as indicated there, Prof. Peter von Cornelius, the painter, but a nephew and godson of that celebrated artist. Herr Peter Cornelius, the younger, lives at Weimar, is a musician by profession, and belongs to the artistic circle assembled round Dr. Franz Liszt. He is considered a gifted young man of much promise."

TWENTY-SIXTH MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The serious business of the Association ended on Tuesday last, with the closing of the several Sections and the announcement of the meeting for next year at Dublin, with Dr. Lloyd as President. The more agreeable—if less important—business graciously extended itself to Thursday, and terminated very poetically among the ruins of Tintern Abbey. In some respects the meeting at Cheltenham has been remarkable. The attendance has not been large, and very little local or casual interest has been excited by the papers read. But the work of the Association has been solid, and the results will be enduring. In most of the Sections new and good information has been placed under the public eye. Unknown men of science have become known to their fellows. Section A, in spite of some important communications, has, perhaps, been less active than usual,—having wasted about a tenth of its time in needless and elaborate proof, most ably accomplished by Dr. Whewell, of the moon's rotation; but the local field of inquiry and observation has been more favourable to the geologist and the naturalist. The excursions have been many, and the places chiefly visited have been as remarkable for historic interest as for beauty. Seven Springs, Sudeley Castle, Gloucester, and Tewkesbury, have been the favourite drives. Some of the visitors braved a storm of rain rather than miss the antiquities of Cirencester. The closing excursion extended as far as Chepstow and Tintern Abbey. We drove over to Sudeley to note the

progress of restoring this fine Shakspearian castle—one of those old monuments in which all the children of imagination have a common interest,—but which a series of mishaps had threatened to yield up for ever to storm and rain,—and we are glad to report that the present owners of the ruin have a real sense of their trust, and that both castle and church are being restored with something of poetic and religious reverence. A few years ago, before Mr. Dent bought the place, a public house occupied a corner of the castle, the quadrangle was a tea-garden, the chamber in which Queen Catherine Parr died was roofless, and the interior walls of the church were covered with ivy and arbutus. Mrs. Dent, in the absence of her husband, did the honours of her house most graciously, pointing out in every room the historical relics, collected from every quarter and at any cost, which illustrate the story of the castle and its inmates or visitors. The party which ventured to Cirencester received the most polite attention from Lord Bathurst, who very flatteringly opened all the treasures of his residence to the inspection of his visitors. Lord Northwick opened his fine gallery of pictures, ancient and modern, and many were the hours during which philosophers, somewhat warm with the labour and crowd of their particular Sections, stole away to the cool galleries of Thirlstone House. The walks, gardens, spas, and other of the many attractions of Cheltenham were most liberally opened, not merely for evening gatherings of the members and visitors, but for daily promenades; and the portico of the Queen's Hotel, the headquarters of science during the week, was nightly converted into an intellectual arena—where men of letters, men of science, and members of parliament met—in the light and buoyant vein of philosophers out of school—to discuss the Silurian system, or to jest over the moon's rotation. A photographic exhibition and a collection of geological specimens furnished favourite centres for the loungers between Sectional sittings. The *Soirées* at Pittville Spa and at the College on the evenings of Thursday and Saturday were varied with music. Altogether the Meeting at Cheltenham has been most pleasant.

On Friday evening a large audience gathered in the College to hear Sir Henry Rawlinson's Lecture—of which the following is an abstract.—

The subject of the lecture being announced as 'A Discourse on recent Discoveries in Assyria and Babylonia, and on the Result of Cuneiform Research up to the present time,' it was explained that, notwithstanding this imposing title, there was no intention of attempting to embrace the whole field of Assyrian antiquities; but that the lecturer's remarks, on the contrary, would be restricted to the Cuneiform Inscriptions, a mere sketch being traced out, in the first place, of the process by which these inscriptions had been rendered intelligible, and *à résumé* being subsequently given of the most important historical results that had been derived from them. The gradual progress of decipherment was then sketched out from the earliest period to the latest, and full credit was given to the various inquirers, both Continental and English, who have made successive improvements in the study, and by whose united efforts Cuneiform science had been brought to its present state of completion,—the names of Grotefend, of Lassen, and Bournouf being honourably mentioned among the earlier discoverers, and those of Oppert, Hincks, and Fox Talbot among the later; while the lecturer claimed no higher position than that of being associated as a fellow-labourer with these distinguished savans. It was well known that the Rosetta Stone, containing the Greek translation of an Egyptian edict of the Ptolemies, had furnished a key to the interpretation of Hieroglyphic writing, but in regard to the Cuneiform character no such help had been available. There had been, it is true, a number of trilingual Cuneiform inscriptions to work upon; but the alphabet and language in which each one of the three versions of these inscriptions was written, were, at the commencement, equally unknown. It had been necessary then to break soil, in the first instance, by mere guesswork. Three groups of characters had been identified, from their relative position, in the

"first," or Persian, columns of the tablets of Ecbatana, as representing proper names, and apparently arranged in genealogical succession: it was assumed, from our knowledge of ancient Persian history, that the Greek forms of Hystaspes, Darius, and Xerxes were the most probable correspondents of the three unknown Cuneiform groups. These names were accordingly applied at hazard, and the comparison came out satisfactorily; that is, for instance, the same Cuneiform character was found as the third letter in Hystaspes, the last in Darius, and the second in Xerxes (*ks=x*), and might be assumed, therefore, to represent the letter *s*:—in fact, the names thus applied were the true Greek equivalents of the Cuneiform groups, and the alphabetic values of ten or twelve characters were thus obtained. Shortly afterwards a list of names was copied, which recorded the genealogy of Darius, as preserved by Herodotus; and, in addition to this, a catalogue was found of the Satrapies of the empire. Titles and grammatical forms and inflexions were also recognized, and in due course, with these aids, the ancient Persian language of the Achæmenian ages was rendered thoroughly intelligible, and was proved to be very closely allied to the Vedic Sanscrit. Thus was the first step achieved in the progress of decipherment. The next step (passing over the Median or Scythic branch of the subject as of no immediate consequence to the argument) was to apply the knowledge acquired of the Persian Cuneiform writing to the decipherment of the Assyrian. Most of the Rock Inscriptions of Persia were trilingual, being addressed to the three great ethnic divisions of the empire, which corresponded with the Persian, Turkish, and Arab races of the present day, and there was thus a somewhat extensive field of comparison available from the commencement; but owing to the extreme complication of the Assyrian system of writing, and the rare occurrence of proper names in the ordinary trilingual inscriptions, no great progress was made in Assyrian decipherment for a very considerable period. In fact, it was not until the Assyrian version of the great Behistun record was obtained, that any real tangible data might be said to exist for investigating the Assyrian alphabet. A portion of this version was recovered by Sir Henry Rawlinson in 1844, the remainder in 1846; and from the following year, it was said, Assyrian discovery might be held to commence. An interesting account was now read to the meeting of the ascent of the rock of Behistun, and of the means whereby the three versions of the records of Darius had been successfully copied by the lecturer, after the task had been declared by a French antiquarian Commission to be of impossible accomplishment. As it was necessary, in order to reach the sculptures, to scale in the first place a precipitous mountain to the height of about 500 feet, and then to stand upon the top-most step of a ladder placed almost perpendicularly against the rock, and resting on a foot-ledge of no more than eighteen inches in width, it was shown that a certain degree of nerve was required for the operation; but, at the same time, the lecturer thought the difficulty of the task had been exaggerated. The Median tablets were, perhaps, less easy to be reached than the Persian; and the Assyrian version, inscribed on an overhanging mass of rock, was the most inaccessible of all. Although, indeed, this version had been copied by the lecturer by the aid of a telescope from a ledge of rock on the opposite side of the ravine, he had failed in all his endeavours to reach the spot himself; and had been obliged, in order to procure a paper cast of the inscription, which could alone be implicitly depended on, to employ a wild Kurdish boy, whose cat-like agility in passing over the smooth surface of the nearly perpendicular rock was described as something truly marvellous. An insight having been obtained into the mysteries of Assyrian writing by a careful analysis of the Behistun equivalent inscriptions, the inquiry was greatly extended, and results were verified by subsequent examination of the innumerable records which were being brought to light from the excavations of Nineveh and the other Assyrian capitals. These documents, although beset with difficulties, gradually yielded to patient investigation. The

especial difficulty of polyphone characters,—that is, of the same letter having several different phonetic values, which had at first seemed fatal to anything like certainty or precision of result, was in a great measure remedied by the discovery of the source from which it originated. It was found that Cuneiform writing, closely allied to hieroglyphic expression, had been first introduced into Chaldaea by a Hamite race cognate with the Egyptians; that the primitive Cuneiform characters were, in fact, like the hieroglyphs, mere pictures of natural objects, which, when used alphabetically, possessed a value corresponding with the name of the object represented. As the primitive race was composed of many tribes, each possessing its own vocabulary, each natural object had many names, and each character had many values. This confusion, embarrassing enough from the outset, was increased in after times, when the Semitic Assyrians adopted the old Hamite system of writing; for the characters then not only retained their former values, derived from the polyglott vocabulary of the primitive race, but new values were also assigned to them, corresponding with synonyms in the Assyrian language. The discovery that there thus existed a copious admixture, in the Assyrian system of writing, of the old Hamite element, which the Lecturer had announced at Oxford in last December, had been of the most essential value, not only in resolving difficulties both of alphabetical expression and of etymology in the inscriptions of Nineveh, but also in pointing the way to an investigation of those far more ancient and more interesting records belonging to the primitive race which were written in the old Hamite tongue.

A very large portion of the clay tablets deposited in the British Museum were now found to relate to this special branch of philology. The science of Assyria even to the latest times appeared to have been recorded in the old Hamite language, which the Lecturer, for the sake of convenience, denominated Chaldaee, and the acquisition accordingly of this tongue was regarded as an essential part of Assyrian education,—hence the preparation of a very large number of elementary treatises, intended for the instruction of the Assyrian youth. Comparative alphabets, that is, explanations, in Chaldaee and Assyrian respectively, of the characters which were common to the two languages; extensive bilingual vocabularies; grammatical synopses and phrase-books, arranged on a plan very closely resembling the Hamiltonian system, were among the highly interesting relics of this class which were being now subjected to examination; and the knowledge of the primitive Chaldaee which was thus acquired would at a future time be made available for the interpretation of the independent Chaldaee records,—precisely as the knowledge of the Assyrian derived from a comparison of the versions in that tongue with the previously deciphered Persian had been already applied to the explanation of the independent inscriptions of Nineveh.

The Lecturer, having thus briefly noticed the progress and present state of Cuneiform research, and having endeavoured to satisfy his audience of the soundness of the system of interpretation, which was now, he believed, universally adopted by all inquirers both in England and on the Continent, proceeded to notice the most important historical discoveries that had resulted from the study of the Inscriptions. These discoveries were classed under three chronological heads: the Chaldaean period, the Assyrian period, and the Babylonian period. The Chaldaean period extended from the earliest dawn of history to the institution of a Semitic Empire on the Tigris in the thirteenth century B.C. There were many traces in the Inscriptions of a tradition that the first colonists had come from Ethiopia under the leading of a hero, who answered to the Nimrod of Scripture, and who was deified in the country as *Nergal*,—an explanation being thus afforded of the Biblical ethnic scheme which described Nimrod as the son of Cush, who again was the brother of Mizraim. This *Nergal* was the God of "the Chase" and the God of "War," and was further regarded as a real historic personage, being invoked by the kings as their "ancestor," "the founder of their race." He was

depicted as a Lion, *Nergal*, indeed, signifying in primitive Chaldee "the great animal," and being applied to "a Lion" among beasts, as to "a hero" among men,—and his other names, *Nimrud* and *Aria*, had the same or nearly the same signification. *Aria* was perhaps connected with the Greek *Ἀρης*, as *Nerig*, the Sabaean name for the planet Mars, was undoubtedly a contraction of *Nergal*,—and as *Mirikh*, the old Arabic title for the same planet, preserved the name of the country (*Mirukh*, Gr. *Misopon*, for *Æthiopia*) from whence *Nergal* came. It was further curious to observe that in all the geographical lists *Mirukh* and *Makkan* (*Misopon* and *Makru*) were placed in juxtaposition with *Hur* and *Akkad*, in evident allusion to the line of the original immigration from *Æthiopia* along the southern shores of Arabia to the mouth of the Euphrates. *Nergal* was especially worshipped at *Cutha* (a few miles N.E. of Babylon), this city being called by the Talmudists and the Arabs the city of *Nimrud*. Its ancient Chaldean name was *Tiggaba*, answering to the *Digba* of Pliny and the *Διγβα* of Ptolemy.

The principal other Chaldean capitals were as follows:—

1. *Hur*, or *Ur* of the Chaldees, dedicated to the Moon, and hence called *Erech* (Gen. x. 10) and *Καρυίτιν*. The Hamite name of this city was probably *Sheshach*, as in Jeremiah li. 41; the ruins are now called *Mugheir*.

2. *Warka*, dedicated to Beltis, the *Ορσην* of the Greeks, but the ancient name unknown.

3. *Larsha*, Ellasar of Gen. xiv. 1, *Λαρσα* of the Greeks, sacred to the Sun, and bearing the Hamite name of that divinity. The ruins are now called *Senkerch*.

4. *Nipur*, now called *Niffer*, sacred to Belus, and named after him by the Hamites; hence the *Βελήν* of Ptolemy, identical with the *Calnech* of Gen. x. 10, and the probable site of the tower of Babel.

5. Babylon itself, *Bab-il*, "the gate of the God *Il*" (Gr. *Διός*), sacred to Merodach. *Shinar* was perhaps the Hamite name.

6. *Borsippa*, or *Birs Nimrud*. The name *Borsippa* is Hamite, and probably means "the weedy lake." The city was dedicated to Nebo or Hermes.

7. *Sippara*, sacred to "the Sun" and *Anunit*, or Apollo and Diana. The Sepharvaim of Scripture (2 Kings xvii. 30), with its Gods, Adramelech and Ananmelech—Gr. *Σενπαρά*—modern *Mosab*. The Hamite name was perhaps *Huparat*, whence the Euphrates. The Semitic name was *Tispar*; Talmudic and Arabic *Sura*, applied equally to the city and the river, as in the Inscriptions.

Hur was probably the most ancient of all these cities, for the expression often occurs—"from the remotest times, from the foundation of *Hur*." The primitive Hamite race was divided apparently into four branches, which bore the name of *Kiprat irba*. The principal division was named *Akkad*,—a title that applied in a later age to the entire country, and the Chaldees were a mere subdivision of the Akkad.

A nominal list was exhibited of fifteen kings belonging to the primitive Chaldean race, and there were perhaps an equal number of royal names, as yet doubtfully or imperfectly read. This line of kings began to reign probably in the 23rd century B.C., and continued in power to the 13th century, when it gave way to the Semites, who established their seat of empire at Nineveh. A king *Kudur* of this line, who reigned about 1950 B.C., was pointed out as the probable representative of the Chedorlaomer of Scripture, his distinctive epithet being "the Ravager of the West," in apparent allusion to the famous Syrian campaign, in which, according to Genesis, he was defeated by Abraham. A later king, *Isni dagon*, was proved by a remarkable series of dates preserved in the inscriptions of Assyria to have lived as early as B.C. 1860. The Lecturer had received that day from a friend at Bagdad the impression of a seal, which proved to have been the signet-ring of one of those early monarchs, *Durri galacu*, and which stated the owner to have been the son of another king of the line, *Purna puriyas*, no previous evidence being extant of the relationship of

the two kings, though many inscriptions had been found of each of them. It was thus each successive relic extended historical discovery, and confirmed previous suppositions. The language in which all the early legends were written was of the Hamite family, having been brought apparently from *Æthiopia*, through Arabia, by the primitive colonists. Many of the terms belonging to it were to be recognized in the *Galla*, the most ancient, perhaps, of the African dialects now available for comparison; and there was also an evident similarity between the vocabulary of this tongue and that of the Arabic, where the latter differed from its sister languages of the Semitic family. There were, however, a considerable number of verbal roots common to the Assyrian and primitive Chaldean,—an additional argument being thus furnished in favour of the theory advanced by Bunsen, Max Müller, and others, that Semitism was a mere development of an anterior Hamitism. The Lecturer, indeed, thought that through the primitive language of Chaldean, we should be able to trace a connexion between the Semitic languages on the one side, and the Arian and Turanian languages on the other. Viewed according to philological rule, the Lecturer would certainly call the primitive Chaldean, Turanian or Scythic; yet a Semitic germ was to be detected in most of the verbal roots, while a great number of the nouns were Arian.

The Assyrian branch of the inquiry, which the Lecturer now took up, was stated to be of particular interest in furnishing a series of notices, which related to Jewish history, and which thus afforded the means of verifying the accuracy of the Hebrew writings. The institution of an Assyrian Empire probably dated from the thirteenth century B.C.; but under the early kings of the line historical records had not been kept, or at any rate such records had not been found in the excavations. The names and titles of these kings were preserved in the brick legends; but the earliest Assyrian document which entered at all into historical detail was the inscription on the cylinders of Tiglath Pileser I., dating from about B.C. 1100. Here was found an account of the conquest of Asia Minor and Syria, the names of about 100 cities and provinces belonging to these parts being duly registered. It was interesting to find that Southern Syria at that time was held by the *Khasmonim*, subjects of the King of Egypt,—the term *Xasmonim* being that employed by the LXX. to replace the *Caluchim* of Scripture, who, as colonists from Caphtor, were the progenitors of the Philistines, so well known as the enemies of the Jews. After an interval of 250 years from this period, the Assyrian annals began to assume the form of continuous history,—the wars of the great Sardanapalus in all the countries extending from the Persian Gulf to the Mediterranean being chronicled in the most elaborate detail. It was, however, under the successor of this king, in about B.C. 830, that the Assyrian arms first came in contact with the Jews. Jehu, the descendant of Omri, king of Samaria, sent a valuable tribute at this time to the court of Nineveh, in return probably for the assistance rendered to Israel in the successive discomfiture of the formidable kings of Northern Syria, Ben Hadad and Hazael, by the armies of the Assyrian monarch. From the earliest period to the latest Syria is spoken of in the inscriptions as the land of the *Khetis*, or Hittites, the northern capital being at Carchemish, on the Euphrates, adjoining Hierapolis or Mabog, and the southern being at Damascus; while the name of *Ashur*, answering probably to the *Atech* of the Egyptian records, was not unfrequently used in a general sense like the *Aram* of Scripture.

Again, in about B.C. 750, under an Assyrian king whose name was perhaps to be read as *Phulukh*, and who almost certainly represented the Pul of Scripture, a second notice occurred of Omri, or Samaria, as having paid tribute to Nineveh, in exact conformity with the Scriptural account of the payment of 1,000 talents of silver by Menahem to Pul. As the wife of *Phulukh*, or *Pul*, was also mentioned under the name of *Sammuramit*, the lecturer conjectured that this royal pair represented the Bolochus and Semiramis of

the Greeks, with whom the old dynasty expired in about B.C. 747. It further seemed probable that Semiramis, at this period, founded a new dynasty in Babylon, commencing with her son, Nabonassar,—while a usurper, Tiglath Pileser, opened a contemporaneous line of royalty at Nineveh. In the annals of Tiglath Pileser there were abundant notices of Biblical kings, of Menahem, who was yet reigning in Samaria in the eighth year of the reign of the Assyrian monarch, of Rezin of Damascus, of Hiram of Tyre, and of others. Tiglath Pileser might be supposed to have been succeeded by his son Shalmaneser in about B.C. 729. This king then attacked Hoshea, and laid siege to Samaria in B.C. 724, but lost his throne to another usurper named Sargon before the city fell. Sargon's first exploit in 721 was to bring the siege to a close, and a detailed notice was found in his annals of the carrying away the Ten Tribes into captivity. His wars, also, with Merodach Baladan, of Babylon, were described at great length; and scores of Scriptural names were to be recognized in the copious annals engraved on the walls of his palace at Khursabad. Of still greater interest, however, were the annals of Sennacherib, the son and successor of Sargon, who ascended the throne in B.C. 702. These annals, lithographed from the famous Cylinder of Sennacherib, were exhibited in the lecture-room, and a portion of them, referring to the remarkable events of the third year of the king's reign, was read in English to the meeting. In the account thus given by the Assyrian king of his campaign against Hezekiah, king of Judah, and of his battle with the Egyptians and *Æthiopians*, there was, of course a strong colouring in favour of the Assyrians; yet the events recorded were substantially the same as those described in the eighteenth chapter of the second book of Kings. Hezekiah paid a heavy tribute to Sennacherib, but Jerusalem, though hardly pressed, was not taken. It was, further, particularly worthy of remark that, as the captives on this occasion were stated at 200,150 souls, the number of prisoners in the previous desolation of Samaria by Sargon being little more than a tenth of that amount, so in the traditions of the Jews noticed by Demetrius, under the Seleucide, and also throughout the Talmud, the great captivity was always attributed to Sennacherib, and not to Sargon or Shalmaneser.

In regard to Esar Haddon, the son of Sennacherib, it was only necessary to quote his acknowledgment of having received assistance in the construction of one of his palaces from Manasseh, King of Judah, and also the valuable notice which was left by him of his conquest of Egypt and *Æthiopia*,—a notice which supplied a very important blank in history, and explained the confused statement of Herodotus respecting the Dodecarchy, and further showed how many of the prophecies against Egypt had been fulfilled (as in Isaiah xx. 3, &c.) Under *Assur-bani-pal II.*, who succeeded his father Esar Haddon, and who was probably also contemporary with Manasseh, the Assyrians did not apparently come in contact with the Jews. The king warred almost exclusively in Babylonia and Susiana, being moreover much addicted to the chase, and being further occupied in building a very splendid palace at Nineveh, from which the beautiful marbles, lately deposited in the British Museum, had been excavated. In that palace he had likewise amassed a vast collection of inscribed clay tablets forming the Royal Library, recently brought to England—they were all more or less injured, but the number could not be less than 20,000, and when properly deciphered they would, no doubt, furnish important additions to our knowledge of the ancient world.

The last Assyrian king named *Assur-emit-ili* was son of *Assur-bani-pal*, and probably lost the throne of Nineveh at the Medes and Babylonians in B.C. 625.

The concluding portion of the lecture was devoted to notices of the Babylonian kings, Nebuchadnezzar, Neriglissar and Nabonidus.

We return to the Sections and their doings.

THURSDAY.

SECTION A.—MATHEMATICAL AND PHYSICAL SCIENCE.

President—REV. R. WALKER.
Vice-Presidents—SIR W. SNOW HARRIS, REV. H. LLOYD, B.P. PRICE,
 REV. W. WHEWELL, LORD WROTHESLEY.
Secretaries—PROF. STEVELLY, C. BROOKE, REV. T. A. SOUTHWOOD,
 REV. J. C. TUBSILL.
Committee—REV. DR. BOOTH, REV. T. CHEVALLIER, DR. R. GRENE, W.
 R. GROVE, PROF. HENNESSY, REV. MR. KING, DR. LEE, J. C. MAX-
 WELL, J. NAUGHTON, F. OSLER, PROF. PHILLIPS, REV. G. PRITCHARD, W.
 WHITEHOUSE, PROF. BOOLE, REV. DR. HICKS, T. R. SPRAGUE, PROF.
 STONEY, M. J. JOHNSON, PROF. G. NEUMAYER, PROF. KUFFNER, J.
 WEISS, PROF. SIR W. HAMILTON.

THE PRESIDENT, on taking the chair, briefly explained to the Section the objects proposed by the British Association, and the manner in which these objects were worked out in the several Sections: observing that by a fundamental rule Reports on the several scientific branches which had been drawn up on the invitation of the Association took precedence of all voluntary communications, even in cases where the former were merely provisional reports. In accordance with this rule, the first paper on the list for to-day was a Report by Prof. POWELL on Luminous Meteors; but as that gentleman was detained from the meeting by a domestic affliction, Dr. Lee had kindly consented to bring the Report under the notice of the Section.

Dr. LEE stated that the Report was the continuation of those formerly presented to the Association, and extended from September 1853 to May 1856. The author observed, that although the number recorded in this Report was much less than those of former years, yet some of them were of more than ordinary interest, especially those from Prof. Piazzi Smyth, Mrs. Smyth, and E. J. Low, Esq. Dr. Lee then stated that the tabulated part of the Report would be printed at length in the next volume, and could be consulted at leisure by those interested in the subject; but he begged to read the following notes and letters, which were embodied in the Appendix. Extract from Prof. C. P. Smyth's communication:—"The meteor was apparently below the clouds, for they were thick and compact cirrostrati in all that part of the sky, shutting out all the stars, and reflecting the glare of distant ironworks; and the meteor showed no symptom of shining through this cloudy medium, for it was well defined. The clouds were such as have an altitude of four to five miles attributed to them, and exercise a very scattering effect on rays of light passing through them, and must have been composed of frozen particles. One or two stars were hazily seen through the clouds in the S. and S.W.—The next was an extract from a letter of Mrs. Smyth:—"On Monday, the 7th of January, 1856, as I was returning homeward from the northward with a friend, about a quarter before five o'clock P.M., my friend suddenly exclaimed, 'there is a rocket' pointing to the southward, in the direction of the Chiltern Hills. She saw it explode at the lower end of a long and rather slanting fiery train. The sky being very clear it was still bright daylight. Supposing it only a rocket, although a gigantic one, we resumed our conversation; but the stationary character of the train again attracted our attention, though we ascribed it chiefly to the stillness of the air. It was //, or not quite so oblique: after upwards of five minutes it gradually became less dense, as if the fiery flakes or atoms receded from each other. Then it gradually assumed the appearance of very bright small clouds at sunset, only the brightest side was turned to the eastward. Elevation of the phenomenon above the horizon at first about 35°. Length of the train about 5': when the train became dismembered it seemed to have risen higher in the atmosphere by about 10°."—The next was an extract of a letter from E. J. Low, Esq., respecting a meteor seen, at Highfield House, on the 10th of December, 1855, at 6^h 13^m A.M., accompanied by five sketches of the successive appearances of the train of the meteor. It was first seen in the N.N.W., moving towards the W. At first it more closely resembled a brilliant flash of lightning than a meteor. The train was like a comet, with parallel sides. When first seen it was not far from the position of H 17 Camelopardi, and moving downwards to midway between Capella and μ Persei. The size was about the apparent diameter of the moon. There was no noise of explosion heard. After the meteor itself had vanished a belt

of light, similar to that of a comet's tail, was visible along the whole path of the meteor. This gradually became less bright, and expanded in breadth after a short time: the lower portion became curved towards the east. This curving gradually increased, as shown in the sketches, until finally it assumed the form of a nearly circular band, not quite closed at the upper part. The upper portion never moved its position in the heavens. Finally, on breaking up, the base of the circle disappeared first. It was visible fully ten minutes. A falling star, of about the first magnitude, crossed over the band horizontally from W. to E., near Capella, and moving towards ϵ Cassiopeie. The night was cloudless, with a cutting E.S.E. wind.—No. 6 in the Appendix is an extract from a letter of E. J. Low, Esq., from the Observatory, Beeston, near Nottingham, dated July 25th, 1856:—"From the appearances presented in the several large meteors seen at the end of last and at the beginning of this year, it appears evident to me that these bodies are not self-luminous,—the light seems to be owing to the meteor, instead of being the light of the meteor. Probably the great speed causes a peculiar property of the upper regions to ignite, at the instant of ignition being an intense blaze, and then subsiding into a phosphorescent flame, which may linger for a length of time, and be wafted along by currents of air, as was the case in several instances. In the case of the meteor of December 19th, 1855, it moved over 18½° in less than a second of time. It cannot, therefore, be supposed that the meteor itself could be within 5° of its path ten minutes afterwards. Now, if we suppose the meteor burst at this point (which to me seems improbable), it must have burst in a medium where light could shine; and if so, it is as easy to suppose some substance could be ignited as that the meteor itself should blaze: the intensity of the light is too great for reflected light."

Report of a Committee, consisting of Messrs. A. Cayley, R. Grant, and G. G. Stokes, to consider the formation of a Catalogue of Philosophical Memoirs.—The Committee were appointed—on the occasion of a communication from Prof. Henry, of Washington, containing a proposal for the publication of Philosophical Memoirs scattered throughout the Transactions of Societies in Europe and America, with the offer of co-operation on the part of the Smithsonian Institute to the extent of preparing and publishing, in accordance with the general plan which might be adopted by the British Association, a Catalogue of all the American Memoirs of Physical Science—to consider the best system of arrangement, and to report thereon to the Council. The Committee are desirous of expressing their sense of the great importance and increasing need of such a catalogue. They understand the proposal of the Smithsonian Institute to be, that a separate catalogue should be prepared and published for America. In the opinion of the Committee, the Catalogue should embrace the mathematical and physical sciences, but should exclude natural history and physiology, geology, mineralogy, and chemistry, which would properly form the subject-matter of a distinct catalogue or catalogues. The difficulty of drawing the line would perhaps be greatest with regard to chemistry and geology; but the Committee would admit into the Catalogue memoirs not purely chemical or geological, but having a direct bearing upon the subjects of the Catalogue. The Catalogue should not be restricted to memoirs in Transactions of Societies, but should comprise also memoirs in the Proceedings of Societies, in mathematical and scientific journals, in Ephemerides and volumes of observations, and in other collections not coming under any of the preceding heads. The Catalogue would not comprise separate works. The Catalogue should begin from the year 1800. There should be a catalogue according to the names of authors, and also a catalogue according to subjects,—the title of the memoir, date, and other particulars to be in each case given in full, so as to avoid the necessity of a reference from the one catalogue to the other. The Catalogue should, in referring to a memoir, give the number as well of the last as of the first page, so as to show the length of the memoir. The Catalogue should give in every case the date of a

memoir (the year only),—namely, in the case of memoirs published in the Transactions of a Society the date of reading, and in other cases the date on the title-page of the volume. Such date should be inserted as a distinct fact, even in the case of a volume of Transactions referred to by its date. The Catalogue should contain a list of volumes indexed showing the complete title, with, in the case of Transactions, the year to which the volume belongs and the year of publication; and in other cases the year of publication, and the abbreviated reference to the work. The references to works should be given in a form sufficiently full to be easily intelligible without turning to the explanation of such reference. The author's name and the date should be printed in a distinctive type, so as to be conspicuous at first sight; and, generally, the typographical execution should be such as to facilitate as much as possible the use of the catalogue. As to the Catalogue according to the authors' names, the memoirs of the same author should be arranged according to their dates. As to the Catalogue according to the subjects, the question of the arrangement is one of very great difficulty. It appears to the Committee that the scheme of arrangement cannot be fixed upon according to any *à priori* classification of subjects, but must be determined after some progress has been made in the preliminary work of collecting the titles of the memoirs to be catalogued. The value of this part of the Catalogue will materially depend upon the selection of a proper principle of arrangement, and the care and accuracy with which such principle is carried out. The arrangement of the memoirs in the ultimate subdivisions should be according to their dates. The most convenient method of making the Catalogue would appear to be that each volume to be indexed should be gone through separately, and a list formed of all the memoirs which came within the plan of the proposed Catalogue. Such list should be in triplicate: one copy for reference, a second copy to be cut up and arranged for the Catalogue according to authors' names, and another copy to be cut up and arranged for the Catalogue according to subjects. The Committee have endeavoured to form an estimate of the space which the Catalogue would occupy. The number of papers in a volume of Transactions is in general small, but there are works, such as the *Comptes Rendus*, the *Astronomische Nachrichten*, the *Philosophical Magazine*, &c., containing a great number of papers, the titles of which would consequently occupy a considerable space in the Catalogue. Upon the whole, the Committee consider that, excluding America, they may estimate the number of papers to be entered at 125,000, or, since each paper would be entered twice, the number of entries would be 250,000. The number of entries that could conveniently be brought into a page quarto (double columns) would be about thirty, so that, according to the above estimate, the Catalogue would occupy ten quarto volumes of rather more than 800 pages each. It appears to the Committee that there should be paid editors, who should be familiar with the several great branches respectively of the sciences to which the Catalogue relates, but that the general scheme of arrangement and details of the Catalogue should be agreed upon between all the editors, and that they should be jointly responsible for the execution. It would, of course, be necessary that the editors should have the assistance of an adequate staff of clerks. The principal scientific Transactions and works would be accessible in England at the Library of the British Museum and the Libraries of the Royal Society and other philosophical Societies. It would be the duty of the editors to ascertain all the different works which ought to be catalogued, and to procure information as to the contents of such of them as may not happen to be accessible. The Catalogue according to authors' names would be the most readily executed, and this Catalogue, if it should be found convenient, might be first published. The time of bringing out the two Catalogues would of course depend upon the sufficiency of the assistance at the command of the editors; but if the Catalogue be undertaken it is desirable that the arrangement should be such that the complete work might be

brought out within a period not exceeding three years.

'On Isothermal Lines,' by Prof. HENNESSY.—After some preliminary remarks as to the general influence of the distribution of land and water on the forms of isothermal lines, the author proceeded to discuss the distribution of these lines in islands. By considering an island situated so as to have its shores bathed by a warm oceanic current, if the influence of direct solar radiation be obstructed, it appears that the isothermals would be closed curves surrounding the centre of the island and having some relation to its coast line. The influence of ranges of mountains, and in general of inequalities in the surface of the island, as well as the modifying action of general winds, and the resulting changes in the shapes of the isothermals, were explained. By the introduction of solar radiation it now follows from the mathematical theory of heat that the entire quantity of heat received by a unit of surface of the island will depend on two principal terms: one, a function of the distance of the point from the coast, and capable of being expressed in some cases as a function of the difference of latitude of that point and the nearest point on the coast;—and, secondly, of a term depending on the latitude and on an elliptic function of the second order, having for its modulus the sine of the inclination of the equator to the ecliptic. It hence follows that the effect of solar radiation will be to transport the centres of all the closed isothermals towards the pole of the hemisphere in which the island is situated. Some of the lines may thus ultimately terminate at the coast with their convex sides turned towards the equator, while others may still continue as closed curves in the interior. If the influence of difference of latitude and direct solar radiation were greatly predominant compared to other causes affecting the temperature of the island, the isothermals might all terminate on the coast. If the continents may be considered as immense islands so circumstanced, they become subjects for the application of these views.—Prof. Hennessy then proceeded to show that the isothermals of Ireland strictly conformed to his theory. On discussing the observations collected and arranged by Dr. Lloyd in his 'Memoir on the Meteorology of Ireland,' it appears some of its isothermals are actually closed curves, while others terminate at points on the coast, the shortest being closest to the equator. The physical structure of Ireland, and the difference of nearly 4° between the temperature of the seas bathing its shores and the air above them, rendered it probable, *a priori*, that Ireland should present a good example for the application of the theory. From the general nature of his views, Prof. Hennessy anticipated that the discussion of observations in other islands would lead to their further confirmation, and it would ultimately follow that not only are isothermals sinuous in their shapes and not generally parallel to the equator, but that many would be found which do not at all circumscribe the axis which joins the opposite poles of the earth.

Dr. LLOYD made a few remarks in explanation of the nature of the simultaneous meteorological observations in Ireland in 1851, and of the course adopted in their reduction. One of the first results which presented itself, upon a comparison of the monthly means of temperature at the several stations, was the marked defect of temperature at the inland stations, as compared with those on the coast,—showing, in a very decided manner, the influence of the gulf stream. The number of inland stations, however, was too small to afford the basis of any deduction as to the actual law of distribution of temperature; and all that could be done was to determine the law of distribution dependent on geographical position alone,—and thus, by a comparison of the calculated with the observed results at the inland stations, to deduce the amount of the deficiency referred to. Accordingly, the observations at the coast stations were combined by the method of least squares, and the direction of the isothermal lines in each month deduced, abstracting as far as was possible from the effects due to the distribution of land. From these lines the monthly mean temperatures at the inland stations were then calcu-

lated, and the results compared with those observed; and the result of this comparison, combined with the observations of sea-temperature upon the coasts, proved that the effect of the gulf stream was even greater than had been anticipated,—the excess of temperature of the sea above that of the air over the land amounting to nearly 4° Fahr. The increase of temperature of the sea surrounding the coasts of Ireland having thus been found to exceed the utmost difference due to geographical position alone, it is plain that the actual isothermals must (as Prof. Hennessy has observed) be closed curves; and the conclusion showed the importance of observations at the inland as well as the coast stations, sufficient in number and distribution to furnish the basis for a deduction of their form. This, however, was not possible with the existing data. Dr. Lloyd stated, in conclusion, that the case of Ireland, bathed as it was by the waters of a heated sea, was by no means to be taken as a type of the phenomena of island temperature. It appeared, indeed, from the valuable observations of Dufresny, that the temperature of the sea was generally in excess of that of the air above it; but, except in the region of heated currents flowing from a warmer zone, that excess was very small.

'On an Instrument for determining the Value of Intermittent, or Alternating, Electric Currents, for Telegraphic Purposes,' by Mr. E. O. WILDMAN WHITEHOUSE.—The author showed the Section that the effect of a weak electric current, say after it had traversed 100 miles of wire on an ordinary magnetic needle, was altogether inappreciable; and even the effect of strong currents at short intermittent periods caused the needle so to vibrate as to render the observing of the arcs quite impossible; but by transmitting a very feeble current in such a way as to excite a powerful coil and produce an electro-magnet by soft pieces of iron in the axes of the coils, he showed that, by a strongly-framed and accurately-constructed steel-yard, he was able actually to weigh the feeblest currents and to compare them with even the most powerful current transmitted through short distances. The exhibition of the apparatus, which worked admirably, and, as it were, weighed the force of each current as transmitted during the ordinary rapid working of the telegraph, seemed to afford much satisfaction to the Section.

'On the Form of Lightning,' by Mr. J. NASMYTH.—Mr. Nasmyth said that, observing that the form usually attributed to lightning by painters and in works of Art was very different from that which he had observed as exhibited in Nature, he was induced to call attention to it. He believed the error of the artists originated in the form given to the thunderbolt in the hand of Jupiter as sculptured by the early Greeks. The form of lightning as exhibited in Nature was simply an irregular curved line, shooting from the earth below to the cloud above, and often continued from the cloud downwards again to another distant part of the earth. This appearance, he conceived, was the result of the rapidly shooting point of light, which constituted the true lightning, leaving on the eye the impression of the path it traced. In very intense lightning, he had also observed offshoots of an arborescent form to proceed, at several places, from the primary track of the flash.

This communication gave rise to an animated discussion, as to whether or not the flash of lightning was the effect of a rapidly moving point of light or not; and if so, whether the direction was, as stated by Mr. Nasmyth, in nine cases out of ten from the earth to the cloud, or the contrary? Mr. Nasmyth adduced as proof the manner in which leaden pipes were burst, they being bad conductors of electricity, as proofs of his views;—of which he instanced one which had been burst in several places, from the bottom to the top, in Edinburgh, during a thunder-storm, the pieces of which Sir J. Leslie had obtained and placed in his physical class-room. On being questioned, however, by some Members of the Section, as to how these distant burstings outwards along the pipe gave any indication of the direction, it did not appear there were any decisive marks indicating this.

'On the Constancy of Solar Radiation,' by Prof. PIAZZI SMYTH.

'On a New Method of Treating the Doctrine of Parallel Lines,' by Prof. STEVELLY.—The author stated that from the days of Euclid to the present all geometers admitted that Euclid's twelfth axiom was a property to be proved, and not an axiom to be assumed as self-evident; but hitherto no satisfactory and sufficiently elementary proof of it had been adduced. He then showed that, by defining parallel lines to be "when two lines in the same plane were both perpendicular to the same line, they should be called parallel," all the properties of parallel lines as proved by Euclid could be shown to belong to these, by two supplementary propositions. The second of these was, that the line joining any two points along parallel lines, assumed at an equal distance from the line to which both are perpendicular, formed right angles with each of the parallel lines. The author then went through the series of geometrical proofs, which would, however, be unsuited to our report, concluding with the proof of the twelfth axiom of Euclid.

The mathematicians of the Section seemed to admit that the demonstration was rigorous; but doubts were expressed whether it would be suited to elementary teaching, as the proof involved a conclusion arrived at by the method of limits.

FRIDAY.

'Provisional Report on the Progress of Theoretical Dynamics,' by Mr. A. CAYLEY, was read by one of the Secretaries.—It merely regretted the inability of the author to have his Report ready for the present Meeting, and asking permission to have it deferred till the Meeting of 1857. The Secretary who read the Report informed the Section that a recommendation to that effect had been that morning sent up by the Committee of the Section to the Committee of Recommendations.

'Supplemental Report on Atmospheric Currents at Liverpool,' by Mr. F. A. OSLER.—Mr. Osler stated that the complete manner in which the anemometrical observations had been recorded at Liverpool, enabled him to work out some facts in addition to the general results which appeared in the volume of the Association just published, and which, he thought, would possess considerable value and interest to meteorologists. The present paper related to the diurnal laws of the wind when referred to sixteen points of the compass, and gave the mean records obtained from upwards of 70,000 hourly observations. From these, it appears, that at Liverpool the various winds have their maximum and minimum velocity at definite and generally different hours. Thus, the E.N.E. wind attains its maximum about 5 P.M., the E. at 9 P.M., the E.S.E. at midnight, the S.E. at 6 A.M., S.S.E. at 10 A.M., S. at 12 noon; and the minima occur at intervals of about 12 hours from each of these respectively. The N., N.E., and S.S.W. have two maxima and minima in the 24 hours. In most cases, the maximum velocity exceeds that of the minimum in the ratio of nearly two to one.

'On the Eclipse of the Sun mentioned in the First Book of Herodotus,' by the Rev. Dr. HINCKS.—So much has been written on the eclipse which Herodotus describes as occurring during a battle between the Medes and Lydians, that many persons may consider the subject to be exhausted. I believe, however, that a correct opinion which once prevailed has been abandoned on insufficient grounds; and I consider it important to revive it. I may advance, too, some novelties; but whether what I bring forward may be old or new, I am desirous of having the truth of my position tested; and, accordingly, I bring them before the persons who will be best able to point out their errors, if they be erroneous. I am not going to discuss the question on chronological grounds; although I entertain a strong conviction that sound chronology must reject, as absolutely inconsistent with it, the hypothesis that the eclipse of the 28th of May, 585, was that referred to by Herodotus. I will merely endeavour to establish the point, that astronomical truth is not inconsistent with the hypothesis that it was that of the 18th of May, 603. As some of my hearers may not be acquainted with the various opinions entertained respecting this

eclipse, I will briefly state them. Previous to Bayer's publication, in 1728, different writers had proposed different eclipses as that of Herodotus, which we may dismiss from our consideration. Bayer fixed on that of the 18th of May, 603; and Mayer conceived that it was proved by astronomical tables that in that eclipse the track of the moon's shadow would pass over a spot where the battle between the Medes and Lydians might have been fought. Two English writers in the *Philosophical Transactions* for 1753 confirmed this view of Mayer's; and one of them published in the *Transactions* a map, with the supposed track of the shadow. It crossed Cyprus and the Caspian Sea, passing near to Kars, which was proposed as the most probable site of the battle. This view was generally acquiesced in till 1811, when Mr. Baily published a paper on the subject in the *Philosophical Transactions*. He rejected Bayer's eclipse, on the alleged ground that the shadow would fall too far to the south; and he argued for the eclipse of the 30th of September, 610, which, according to the tables published by Vince, would pass through Asia Minor from about Sinope to the south of the Lake Van. Baily, however, destroyed his own hypothesis by a statement which he made at the close of his paper, that the same tables would make the extreme southern point of the shadow to pass 3° of terrestrial latitude south of the most southerly position that could possibly be assigned to the fleet of Agathocles, over which, it is on record, that the eclipse of the 30th of September, 310, passed. As this error of at least 3°, and more probably of 4°, was given by the tables that he used, it was natural for Baily to suppose that a similar error would exist in the position of the shadow in 610, and that it would thus fall to the north of Asia Minor, so that a total eclipse could not have been seen in that country. Mr. Hind has computed the circumstances of this eclipse of 610, and has found that the shadow would pass, not 3° or 4°, but near 10° to the north of what Mr. Baily inferred from his tables. They both found the longitude of the place where the sun was centrally eclipsed at noon to be the same; but Mr. Baily found the latitude of this place to be 31° 6', Mr. Hind found it to be 40° 55'. The position of the centre of the shadow was consequently at this time 589 geographical miles further south by Vince's tables than Mr. Hind has found it to be. In Mr. Hind's letter to the *Athenæum*, he fairly concluded that this eclipse of 610 must be rejected. He, however, committed what appears to me an error in choosing the eclipse of 585. Mr. Baily had rejected that on the ground that the shadow passed too far south. Mr. Hind thought that this objection was completely removed by his correction of Vince's tables. These gave, according to Mr. Baily, 28° 1' N. lat. and 35° 2' E. long. for the place where the sun set centrally eclipsed. Mr. Hind changed these numbers to 35° 51' N. lat. and 32° 47' E. long., throwing the place where this happened 7° 50' northward and 2° 15' westward of Mr. Baily's place. Mr. Hind's place lies about 50 miles to the south of the coast of Cilicia, to the north of the island of Cyprus. The radius of the shadow was about 80 miles; and, therefore, if the field of battle was within a short distance of the Cilician coast, the outer part of the shadow might certainly have passed over it just before sunset, causing a very brief total eclipse of a quarter or half a minute. For the reason already mentioned, my desire to confine myself to the astronomical branch of the subject, I will not treat of the extreme improbability (as it appears to me to be) of supposing that this could be the place, and these the circumstances of the eclipse referred to by Herodotus. I will merely show that, consistently with astronomical truth, the eclipse of the 18th of May, 603, might also be that to which he refers. Before, however, I come to speak of this last eclipse, I must make a remark as to a mistake into which I think that Herodotus has fallen. He says that the eclipse which occurred during the battle was foretold by Thales. The eclipse which Thales foretold is stated on other authority to have been visible in the western part of Asia Minor,—I believe at the Bosphorus, where, however, it is not said to have been total,—and to have occurred

in the 48th Olympiad. The eclipse predicted by Thales was, no doubt, that of 585; but the eclipse which terminated the Lydian war was that of 603,—223 months earlier. Thales had heard of this great eclipse, and of the remarkable effect that it had. He knew also that eclipses of the moon occurred under the same circumstances, at intervals of 223 months. He may have heard, also, or may have inferred, that eclipses of the sun did so too, though not with the same uniformity; and thus he might have ventured on a guess, which proved a lucky one, that on the 28th of May, 585, which would be 223 months from the celebrated eclipse of the sun, he would be visibly eclipsed again. Herodotus heard of this; but he or his informant, through ignorance of astronomy, did not understand the real fact,—and the eclipse of the Lydian war was thus confounded with the eclipse that Thales predicted from it. It remains for me to show that the eclipse of the 18th of May, 603, would satisfy the conditions required; and I may add (what some may consider a matter of importance), that most certainly it took place in the morning, in whatever parts of Western Asia it was visible. The moon was at this time near her perigee, the shadow as large as it could well be, and nothing to hinder the middle of the shadow passing over the armies, if the shadow passed over them at all. I know, however, that it will be denied that this last was possible. I reason, however, thus:—This eclipse of May, 603, took place under the same circumstances as the three that I have already noticed. In all four the moon was a short distance in advance of her ascending node; and, therefore, the error in these tables used by Mr. Baily would throw the shadow to the south of its true place in this as in the other instances. Baily found by his tables that the sun was centrally eclipsed at noon in 35½° N. lat. I correct this to 45° N. lat. The longitude was 68° E.; and this was probably not much astray. Judging, however, for the eclipse of 585, I would say 65° or 66° E. This would be on the east of the Sea of Aral. Now, the track of the shadow towards this point was in the north-east direction. I am not prepared to say where it would cross the line of march by which the Median and Lydian armies would advance to one another; Mr. Hind not having taken any notice of this eclipse in his letter to the *Athenæum*. It is evident, however, that it must have crossed this line of march somewhere; and there the battle must have been going on, and have been interrupted by it. It is not necessary that we should place the battle-field in Asia Minor. This has been generally done, but without the slightest authority. Herodotus gives no intimation of the site of this battle-field. The war, he says, had previously lasted five years with various success. Granting that the Medes first attacked the Lydians, they may have repelled them, and carried the war into the neighbourhood of Media. It has been said that Cappadocia was part of the Median empire, and that Herodotus has so stated. This, however, is an error. Herodotus says that Cyrus possessed Cappadocia, and that Astyages possessed it before him. This was the case in 560 B.C., and for some years before it; but Herodotus nowhere says that it was the case in 603. He speaks of the conquest of Western Asia by the Medes as subsequent to their becoming masters of Assyria; and I know no reason for supposing that this last conquest was prior to 580. I should be glad to learn what the track of the moon's shadow was in the eclipse of May, 603, according to the best modern tables,—but I cannot anticipate that it will be inconsistent with the views that I have adopted. It must have been very nearly the same as is laid down in the map given in the *Philosophical Transactions* for 1753; and this was considered by all chronologists for more than fifty years, till Mr. Baily published his unfortunate paper, to be reconcilable with the narrative of Herodotus, and to give the true place of the battle. It may appear to some persons strange that I should assume the elements of the eclipse obtained by Mayer and Costard from the old tables to be more correct than those obtained by Baily from the new. This paradox, however, is easily explained. The old tables had no secular equations correcting the mean motions; but they

gave the mean motions such as were derived from comparing the Babylonian eclipses described by Ptolemy with modern observations. The tables that Baily used employed larger mean motions, such as were derived from modern observations exclusively, and they corrected them by secular equation. Now, so far as the longitude of the moon herself was concerned, the old and the new tables would not materially differ at the particular epoch when this eclipse of 603 took place. This was about the time of the Babylonian eclipses, for which the tables were calculated, and of course the tables gave the moon's mean place pretty correct for that time, though a few centuries before or after that time they would be seriously astray. In like manner the tables used by Costard gave the place of the node, and consequently the latitude pretty accurately at this particular time; but here the tables used by Baily were in error. They used mean motions professedly derived from modern observations, though I understand they do not correctly represent even these; and they used secular equations to correct them, which were calculated erroneously. They assumed that the secular equation of the node was .735 of that of the mean longitude, as Laplace had made it in his 'Mécanique Céleste'; but in his later work, the 'Système du Monde,' he acknowledges that this was wrong, and he adopts Carlini's decimal .609 as more correct. Here there was an error of one-eighth of the whole secular equation, and to this was to be added another error in the amount of the mean motion of the node. The consequence was, that the node was thrown greatly in advance of its true place, the moon's distance from it, and consequently the latitude, greatly diminished; and in further consequence the moon's shadow thrown far to the south of its actual place. To sum up the matter then briefly, I consider that Baily rejected the eclipse of 603 as laid down in the *Philosophical Transactions* for 1753 on false grounds, and that we ought now to fall back on that eclipse; not to ignore it as has been done by Mr. Hind, who has not condescended to notice it, and who has allowed Mr. Bosanquet to publish a statement on his authority that the eclipse of 585 is the only one that can possibly have satisfied the required condition.

Dr. WHEWELL said that, as the wish of all parties was to make the proceedings of the Sections of the British Association a true representation of the progress of science, it was much to be desired, and would have saved much time both to the learned author and to the Section, if he had been aware that this very eclipse, and, indeed, the whole ground over which the author had travelled, had already been fully discussed in a paper published by the Astronomer Royal in the 'Transactions of the Royal Society for 1850,'—in which, he need not say, that the newest and best tables and helps which the progress most lately made in astronomy were capable of affording were used by the Astronomer Royal in discussing these very eclipses and the questions brought under the notice of the Section in the present communication.

'On the Geometrical Type of Logarithms and the Trigonometry of the Parabola,' by Dr. BOOTH.—The object of this paper is to show that a duality exists between the trigonometry of the circle and the trigonometry of the parabola; that by certain simple transformations we may pass from the formulae of circular to those of parabolic trigonometry. He shows, moreover, the geometrical origin of the quantity known as the Napierian base of logarithms. De Moivre's formula, also, and many others with which analysts were familiar, were traced to their origin by these simple transformations.

'On Fresnel's Formulae,' by the Rev. Prof. POWELL.—The object of this communication was to elicit a more complete discussion of the questions arising out of it, more especially as some views recently taken would seem calculated to put aside the whole reasoning hitherto adopted, and to involve the whole application and interpretation of the Formula in doubt. But it would be impossible to make the paper intelligible to the general reader.

The Rev. Dr. LLOYD observed, that by the *experimentum crucis* lately devised and executed by Prof. Stokes, it was now clearly established that according to Fresnel's original hypothesis, the vibrations must be taken at right angles to the plane of polarization, and that, therefore, the contrary hypothesis and the formula and reasoning founded upon it must be abandoned by analysts.

Dr. R. GREENE exhibited a beautiful Working Model of a Machine, invented by him, last year, for Polishing the Specula of reflecting Telescopes. His object in constructing it was to produce a machine at the cost of 60s. or 70s. which should be equally efficacious for that purpose as a very complex machine invented by Mr. Lassell, of Liverpool, which has produced the finest telescopes ever constructed. Having accurately attained this object, the Doctor found that by adding three or four more pulleys to the machine it was capable of moving the polisher over the speculum in an almost endless variety of curves, so that the operator could choose any variety of figure he might fancy to experiment with. We have ourselves seen a great variety of those beautiful figures traced by the machine itself by fixing a black-lead pencil on the working crank. A machine costing not more than 60s. or 70s. is amply powerful for polishing a speculum of 12 or 14 inches in diameter, which it will generally finish in from four to six hours. The principle of the machine consists of a vertical shaft carrying a sliding crank and an horizontal table or chuck attached to another vertical shaft, but which, being supported by sliding collars, can have its axis moved at pleasure to any distance out of the line of direction of the axis of the crank. The table can be made to revolve from right to left, or the reverse, at pleasure, and move with various velocities. All the journals move in box-wood collars or boxes, which the Doctor finds after many years' trial to be superior to bell-metal, as not heating, soiling the oil, or working loose, and recommends them for general use in mounting every kind of machinery. He also mentioned the great advantage he derived from placing the centre of the speculum a little out of the centre of the revolving table, thus making the excentricity a variable quantity, being sometimes the *sum* and at other times the *difference* of the two excentricities of the table and of the speculum on the table. Lastly, he recommended making the polisher of three circular pieces of light wood joined together, one in the centre and the other two at right angles to the centre-piece, in place of two pieces only as usually employed, and which are liable to warp, while three pieces will never warp with any change in the dryness or dampness of the atmosphere; and in place of forming the grooves in the pitch by indentation with the edge of a strip of thin wood, the Doctor preferred fastening small squares of thin wood to the face of the polisher, and covering them with the pitch, leaving about a quarter of an inch space between the squares.

The paper gave rise to an animated debate, in which many Members joined, particularly Mr. Lassell, who highly approved of the machine and the Doctor's suggestions in using it.

In the course of the discussion upon this paper, the interest in which was much increased by Mr. Lassell's taking part in it, Prof. STONEY remarked that two of the main points now brought forward have been already published. The motion which is given to the spindle carrying the speculum in order to secure the requisite motions without complex mechanism above, and the scoring up of the polisher so that the pitch may have ample room to expand laterally without getting into ridges, were both parts of the Earl of Rosse's original invention, as published in the *Philosophical Transactions* for 1840. Lord Rosse not only was the first to polish large specula successfully by machinery, but further pointed out in the clearest manner the principles which should be kept in view in contriving other machines to effect the same result.

'On various Phenomena of Refraction through Semi-Lenses producing Anomalies in the Illusion of Stereoscopic Images,' by A. CLAUDET.—The paper had for its object to explain the cause of the illusion of curvature given to pictures representing flat

surfaces, when examined in the refracting or semi-lenticular stereoscope. The author showed that all vertical lines seen through prisms or semi-lenses are bent, presenting their concave side to the thin edge of the prism, and as the two photographic pictures are bent in the same manner, the inevitable result of their coalescence in the stereoscope is a concave surface. The only means to avoid this defect is to employ the centre of the lenses to examine the two pictures; but as the centre does not refract laterally the two images, their coincidence cannot take place without placing the optical axis in such a position that they are nearly parallel, as if we were looking at the moon, or a very far object. This is an operation not very easy at the first attempt, but which a little practice will teach us to perform. Persons capable of using such a stereoscope will see the pictures more perfect, and all objects in their natural shape.—Mr. Claudet presented to the Meeting a stereoscope made on this principle, and many of the members present could see perfectly well with it. The author explained the cause of a defect which is very often noticed in examining stereoscopic pictures, viz., that the subject seems in some cases to come out of the openings of the mountings, and in some others to recede from behind,—this last effect being more favourable and more artistic. Mr. Claudet recommended photographers when mounting their pictures to take care that the openings should have their correspondent vertical sides less distant than any two correspondent points of the first plane of the pictures, which could be easily done by means of a pair of compasses, measuring those respective distances. To illustrate the phenomenon of vertical lines, bent prisms forming by coalescence concave surfaces, Mr. Claudet stated that if holding in each hand one prism, the two prisms having their thin edges towards each other, we look at the window from the opposite end of the room, we see first two windows with their vertical lines bent in contrary directions; but by inclining gradually the optical axes, we can converge them until the two images coalesce, and we see only one window: as soon as they coincide the lateral curvature of the vertical lines ceases, and they are bent projectively from back to front: we have then the illusion of a window concave towards the room, such as it would appear reflected by a concave mirror.

'On Photographs Illustrating a New Process of introducing Clouds and Artistic Effect,' by E. VIVIAN.—The result was extremely pleasing; the concentration of light and shadow, and the introduction of middle tint, effecting as fresh an improvement upon the ordinary photograph as the tint stone does in double lithography; thus enabling the photographer to compose pictures in accordance with the rules of Art, without the least sacrifice of detail or departure from the truth of the original negative, so far as the latter is true to Nature; supplying the deficiency of the yellow ray and modifying that of the blue, thus reducing the actinic image to the chiaroscuro of the visual, by toning down the glare produced by the reflection of blue light on foliage, and the unnatural whiteness of slate roofs, water, &c., and affording the means of introducing skies and aerial effects of equal force and delicacy. A plate once prepared may be used for printing any number of positives without further re-touching. We understand that the process will be shortly laid before the Photographical Society.

This communication elicited much discussion.

THURSDAY.

SECTION B.—CHEMICAL SCIENCE.

President.—B. C. BRODIE.
Vice-Presidents.—N. S. MACKENZIE, W. GREGORY, THE MASTER OF THE MINT, DR. MILLER, DR. ANDERSON.
Secretaries.—P. J. WORSLEY, PROF. VOELCKER, J. HORSLEY.
Committee.—DR. S. MACADAM, DR. GLADSTONE, G. GLADSTONE, W. S. WARD, G. LOVE, COL. YERKE, T. J. PEARALL, PROF. ROWNEY, C. BROOKE, DR. GILBERT, B. WARRINGTON, W. R. GROVE, DR. ODLING, DR. SCHURCH, DR. R. D. THOMSON, PROF. J. TENNANT.

'On the Compounds of Chromium and Bismuth,' by MR. W. R. PEARSON.

'On the Conversion of Tannin into Gallic Acid,' by MR. J. HORSLEY.

'On the Corrosive Action of Smoke on Building Stones,' by DR. A. VOELCKER.

'Notes on Nitroglycerine,' by DR. GLADSTONE.

FRIDAY.

'On the Composition of American Phosphate of Lime,' by Prof. VOELCKER.

'On Basic Phosphates of Lime,' by Prof. VOELCKER.

'On Dichromatic Phenomena, exhibited by Coloured Matters in Solution,' by Dr. GLADSTONE.

'On the Constitution of Paraffine from different Sources,' by Dr. ANDERSON.

'On a new Combination of Carbon, Oxygen, and Hydrogen, formed by the Oxidation of Graphite; and on the appearance of Carbon under the Microscope,' by Mr. B. C. BRODIE.

'On the Detection of Strychnine,' by Dr. S. MACADAM.—This paper was illustrated by experiments.

MONDAY.

'On several new Methods of detecting Strychnine and Brucia; a New Method of Extracting the Alkaloids from Nux Vomica, for Toxicological and Manufacturing Purposes. Experiments on Animals with Strychnine, and probable Reasons for non-detection of Strychnine in certain cases. A new Method of Instituting post-mortem Researches for Strychnine,' by Mr. T. HORSLEY.—In the first lecture Mr. Horsley observed that the circumstances attending Palmer's trial induced him to make a series of experiments on the subject, and he tried the effects of a precipitant formed of one part of bichromate of potash dissolved in fourteen parts of water, to which was afterwards added two parts in bulk of strong sulphuric acid. This being tried upon a solution of strychnine, the bulk was entirely precipitated in the form of a beautiful golden coloured and insoluble chromate. The experiment, as performed by Mr. Horsley, was very interesting, and scarcely a trace of bitterness was left in the filtered liquor. He did not claim to have originated this discovery of the use of a chromic salt and an acid liquor; but the point to which he called attention was the essential difference in the mode of application, and he maintained that it was as much out of the power of any human being to define the limit of sensibility which he had attained, as it would be to count the sands or to measure the drops of the ocean. Taking thirty drops of a solution of strychnine containing half a grain, he diluted it with four drams of water. He then dropped in six drops of a solution of bichromate of potash, when crystals immediately formed, and decomposition was complete. Splitting up the half grain of strychnine into millions of atoms of minute crystals, he said that each of these atoms, if they could be separated, would as effectually demonstrate the chemical characteristics of strychnine as though he had operated with a pound weight of the same. He then showed the chemical reaction with those crystals. Dropping a drop of liquor containing the chromate of strychnine into an evaporating dish and shaking it together, he added a drop or two of strong sulphuric acid, and showed the effect as previously noted. He next showed the discolouration produced in chromate of strychnine and chromate of brucia by sulphuric acid, the former being changed to a deep purple and then to a violet and red. It had been asserted since the trial of Palmer that the non-detection of strychnine in the body of John Parsons Cook was owing to the antimony taken by the deceased having somewhat interfered with the tests. Such a supposition was, in his (Mr. Horsley's) opinion, absurd. Nothing, he considered, could more incontestably disprove the fallacy than either of two new tests which he then performed. These he considered double tests, because they had first the obtaining of a peculiar crystalline compound of strychnine, which was afterwards made to develop the characteristic effects by which strychnine is recognized. Mr. Horsley next related a series of experiments which he had made on animals with strychnine, and entered into the probable reasons for its non-detection in certain cases, although (as he had just shown before) a method of detecting infinitesimal quantities of strychnine by tests. He procured three rats at seven o'clock P.M., he (assisted by Dr. Wright) gave each rat a quarter of a grain of powdered strychnine, and two hours afterwards a quarter and half a grain more to one of the three.

Next morning at four o'clock they were all alive, and had eaten food (bread and milk) in the night, but at seven, or a few minutes after, they were all dead. The longest liver was one of the rats that had only had a quarter of a grain. In about three hours afterwards he applied the usual test, but could not detect the least indication of strychnine in the precipitate. There was, moreover, a total absence of bitterness in all the liquor. He tried every part of the bodies of the rats with the like results. What, then, became of the strychnine? Had it been decomposed in the organism, and its nature changed, as Baron Liebig intimated? As to the non-detection of strychnine, he thought it not improbable that the strychnine might have become imbibed into the albumen or other solid matter, and so abstracted from the fluid, forming by coagulation (say, for instance, in the blood) a more or less insoluble albuminate. This idea had occurred to him from noticing the coagulation of the glairy white of egg with strychnine, and the fact of his not recovering the full quantity of the alkaloid whenever he had introduced it. At any rate, it merited consideration. In his second experiment he administered three-quarters of a grain of strychnine to a wild rat, but the animal evinced little of the effects of poison, and it was purposely killed after five days. His third experiment was with two grains of strychnine, administered as a pill wrapped up in blotting-paper, to a dog—a full-sized terrier. It was apparently quite well for five hours, when the operator went to bed, but was found dead next morning, but lying apparently in the most natural position for a dog asleep. When taken up blood flowed freely from its mouth. On opening the animal (continued Mr. Horsley) I found the right ventricle of the heart empty of blood, whilst the left was full, some of the blood being liquid and some clotted. The stomach was carefully secured at both its orifices, and detached. On making an incision, I was surprised at not seeing the paper in which I had wrapped the pill, naturally expecting it would have been reduced to a pulp by the fluid of the stomach. I, therefore, sought for it, and lo! here it is, in precisely the same condition as when introduced into the gullet of the dog, and containing nearly all the strychnine. I have been afraid to disturb it until I had exhibited it to you, and now I will weigh the contents, and ascertain how much has been absorbed or dissolved. This experiment is important, as showing the small quantity of strychnine necessary to destroy life; and, had I not been thus particular to search for the paper envelope, it might, possibly, have led to a fallacy, as I must have used an acid, and that would have dissolved out the strychnine, and the inference would have been that it was obtained from the contents of the stomach, whereas it had never been diffused. In this case, also, none of the absorbed strychnine was detectable in the blood or any part of the animal, although the greatest care was observed in making the experiments. The talented lecturer, who was listened to throughout with great attention, added that he had made further experiments, which he thought proved that it was highly probable a more or less insoluble compound of organic or animal matter with strychnine is found.

'On a new Process for Making and Melting Steel,' by Mr. P. J. WORSLEY.

'On the Incrustations of Blast-furnaces,' by Mr. T. G. CALVERT.

'Photo-chemical Researches,' by Prof. BUNSEN and Dr. H. E. ROSCOE.

'On Albumenized Collodion,' by Mr. W. S. WARD.

'On an Attempt to engrave Collodion Photographs by means of Hydrofluoric Acid Gas,' by Mr. C. POOLEY.

THURSDAY.

SECTION C.—GEOLOGY.

President.—Prof. A. C. RAMSAY.
Vice-Presidents.—Rev. Prof. SEDGWICK, J. B. JONES, the EARL OF DUCIE, W. J. HAMILTON.
Secretaries.—Rev. P. B. BRODIE, T. WRIGHT, J. SCOUALL, E. HULL, Rev. R. HEPPWORTH.
Committee.—Sir R. I. Murchison, Prof. Phillips, Prof. HENNESSY, Rev. W. S. Symonds, W. H. Bailey, J. E. Lee, Prof. OWEN, C. Moore, J. W. Salter, W. T. Aveling, Prof. HARKNESS, W. Sanders, H. C. Sorby, J. Naismyth, J. Taylor, J. Murray, Prof.

Buckman, J. Kelly, S. Stutchbury, S. P. Woodward, R. Chambers, J. I. Whitty, Capt. Woodall, B. Etheridge, Sir C. Hastings, F. W. Binney, Prof. Sedgwick, Rev. E. F. Wills, Rev. O. Fisher, Hon. Prof. Rogers, Prof. Teuhat, J. S. Bowerbank, Prof. Macdonald, J. Leckenly, G. W. Ormerod.

'On a Fossil Mammal (*Stereognathus ooliticus*) from the Stonesfield Slate,' by Prof. OWEN.—Prof. Owen exhibited, by favour of the Rev. J. P. B. Dennis, M.A., a portion of a lower jaw, with three molar teeth, of a small mammal, from the oolitic slate of Stonesfield, Oxfordshire, for which the name of *Stereognathus ooliticus* had been proposed; and after a minute description of the characters of the bone and teeth, he entered upon the question of its probable affinities. These could only be judged of by the peculiarities of certain molar teeth of the lower jaw of the unique fossil. Those teeth presented the singular complexity of six cusps or cones upon the grinding surface, in three longitudinal pairs, the crown of the tooth being quadrate, broadest transversely, but very short or low. The jaw-bone presents a corresponding shallowness and thickness. The cusps are sub-compressed: the outermost and innermost of the three hinder ones are oblique, and converge towards the middle of the crown, being overlapped by the outermost and innermost of the three front cones. The three molar teeth occupy the extent of 4½ lines, or 1 centimètre: each tooth being 3 millimètres in fore and aft extent, and nearly 4 millimètres in transverse extent.—After a comparison of these molars with the multicusp teeth of the rat, the hedgehog, the shrews and Galeopithecii, the author showed that the proportions, numbers, and arrangement of the cusps in those Insectivora forbade a reference of the *Stereognathus*, on dental grounds, to that order. The same negative result followed a comparison of the fossil with the sex-cusp teeth of the young Manatee. The author finally proceeded to point out closer resemblances to the sex-cusp teeth of the oolitic mammal in the eocene Hyracotheres, Microtheres and Hyopotamus; but in these the resemblance was presented only by the teeth of the upper jaw. The lower molar teeth of the Choeropotamus, to which the author deemed those of the Hyracotherium would most closely approximate, when discovered, showed a rudiment of the intermediate cones between the normal pairs of cones. The proportional size and regularity of the form of the cones of the grinding teeth of the *Stereognathus* give a quite different character of the crown from that of the multicusp molars of the Insectivora, and cause the sex-cusp crown of the oolitic mammal to resemble the penta-cusp and quadri-cusp molars of the before-cited extinct Artiodactyle genera. Prof. Owen concluded, therefore, that the *Stereognathus* was most probably a diminutive form of non-ruminant Artiodactyle, of omnivorous habits.

'On the *Dichodon cuspidatus*, from the Upper Eocene of the Isle of Wight and Hordwell, Hants,' by Prof. OWEN.—Prof. Owen communicated the results of examinations of additional specimens of jaws and teeth of the *Dichodon cuspidatus*, which he had received since his original Memoirs on that extinct animal in the 'Quarterly Journal of the Geological Society,' Vol. iv. (June, 1847). The first specimen described supplied the characters of the last true molar tooth of the lower jaw, which had not been previously known. This tooth has six lobes, the additional posterior pair being less than the normal ones, and more simple. The inner surface of the inner lobe has an accessory cusp at the back part of its base, but not at the fore part as in the other lobes. The length of the last lower molar was nine lines, that of the first and second molars being each six lines. A specimen of the *Dichodon cuspidatus* from the Hordwell Sands, in the British Museum, supplied the characters of the permanent incisors, canine, and three anterior premolars of the upper jaw: all these teeth closely correspond in form with the corresponding deciduous teeth, but are of larger size. Finally, a portion of the lower jaw of an aged specimen of *Dichodon*, in the British Museum, showing the effects of attrition on the last molar tooth, was described, and the results of this additional evidence confirmed the conclusions of the author as to the generic distinction of the *Dichodon*.

'Additional Evidence of the Fossil Musk-Ox

(*Bubalus Moschatus*) from the Wiltshire Drift,' by Prof. OWEN.

'On the Stratigraphical Distribution of the Oolitic Echinodermata,' by Dr. T. WRIGHT.

'On the Lignites of the Giant's Causeway and the Isle of Mull,' by Prof. HARKNESS.

'On the Magnesian Limestone having been produced by the Metamorphism of an ordinary Calcareous Deposit,' by Dr. H. C. SORBY.—The author first showed that, in some cases, ordinary calcareous limestone had been unquestionably changed into dolomite, and that the microscopical structure of the Peruvian limestone indicates that it was also originally non-magnesian. Various authors have proved that soluble magnesian salts can effect this change; and since the formation of rock salt and gypsum in the superjacent strata, by the evaporation of sea-water, would give rise to a strong solution of magnesian salts, the author contended that the same conditions that would account for the occurrence of those substances, would explain why a previously-accumulated calcareous deposit had been changed to so great an extent into dolomite.

FRIDAY.

'On some Phenomena in the Malvern District,' by the Rev. W. S. SYMONDS.—After giving a general sketch of the Malvern Hills, the Rev. W. S. Symonds passed on to the objects of the paper, which was the origin of the Haffield conglomerate, and the means by which the Cambrian boulders have been imbedded therein. Prof. Ramsay's glacial theory, he remarked, could hardly, in his opinion, account for their presence. He suggested that, after the period of elevation of the Malvern, the Cambrian rocks, of the Longmynd series, formed the shingle on the beach of the sea, which at that period washed the base of the Malvern Hills. He also showed a small mollusc, which he stated was Permian, from the Keuper.

Prof. PHILLIPS, in a few remarks on the subject, gave a qualified support to Mr. Symonds's suggestions, and called on Prof. Ramsay to give some observations on Mr. Symonds's theory.—Prof. RAMSAY replied, in support of his theory, that the Haffield conglomerate was deposited by glacial action.

'On the Oolite Rocks of the Cotteswold Hills,' by Prof. J. BUCKMAN.

'On a New Species of Anoplotheriid Mammal (*Dichobune Ovinum*, Cuv.) from the Upper Eocene of Herdwell, Hants, with Remarks on the Genera *Dichobune*, *Xiphodon*, and *Microtherium*,' by Prof. OWEN.

'On the *Scelidotherium leptoccephalum*, a Megatheriid Quadruped from La Plata,' by Prof. OWEN.

'On the South Easterly Attenuation of the Inferior Oolitic, Liassic, Triassic, and Permian Formations of England,' by Mr. E. HULL.—The subject of this paper is partly of a local and partly of a general character. Under the first head, the author showed that upon receding from the western escarpment of the Cotteswold Hill, in Gloucestershire, towards Oxfordshire, the middle and upper lias, together with the inferior oolite and fuller's earth, became attenuated to one-twelfth of their original thickness. On the borders of Wychwood Forest, near Burford, in Oxfordshire, the fuller's earth, all the subdivisions of the inferior oolite except the uppermost, and the upper lias have altogether disappeared; and within a vertical depth of about 35 feet we pass from the great oolite into the lower lias. From analogy, it was inferred that the lower lias itself became attenuated in an approximately proportional degree. The author then proceeded to observe that the remaining formations, which intervene between the lias and the coal-formation, afford evidence of similar south-easterly attenuation, as these formations attain their greatest development in Shropshire, Cheshire, and Lancashire. These views, it was observed, were confirmed by the relative positions of the strata in France and Belgium, where cretaceous and oolitic formations rest directly on the coal-measures. While in the Bas Boulonnais the lowest over-lying rock is of the age of the great oolite. These facts proved the dwindling away of the lower secondary rocks of England in the direction

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of the Bristol Channel. The author then endeavoured to show that the coal-measures, in all probability, suffered no such diminution of their thickness or productiveness, but that they extended almost continuously from the coal-fields of England into Belgium, and as far south as the carboniferous axis, supposed by Mr. Godwin Austen to extend under the valley of the Thames. From these data, the author concluded that coal may be found to lie at accessible depths under parts of Oxfordshire and Northamptonshire, and, with the aid of improved appliances for working, may be rendered available to our use.

'On the Occurrence of Upper Lias Ammonites in the (so-called) Basement Beds of the Inferior Oolite,' by Dr. T. WRIGHT.

'On the Middle and Upper Lias of the West of England,' by Mr. C. MOORE.—Mr. Moore illustrated the paper by a number of specimens, and also amused the Section by informing them what animals were contained in certain nodules from the lias, which, on being broken, presented the animals indicated by Mr. Moore.

Prof. RAMSAY said this was the first time he had heard or seen clairvoyance applied to geology,—and that it might be safely predicated of Mr. Moore that he could see through a mile stone.

'On some Fossil Fishes from the Strata of the Moselle,' by Mr. J. E. LEE.

'On an Elephant's Grinder from the Cerinthium Limestone,' by the same.

THURSDAY.

SECTION D.—ZOOLOGY AND BOTANY.

President.—T. BELL.

Vice-Presidents.—Rev. L. JENYNS, Dr. R. HALL, Dr. J. E. GRAY, Prof. BAIRD, Rev. Prof. HESSLOW, Prof. BEEBE.

Secretaries.—Dr. E. LANKESTER, J. BUCKMAN, Dr. J. ABERCROMBIE.

Committees.—Rev. P. Carpenter, T. C. Archer, Prof. J. Goodsir, R. M'Andrew, Dr. Rae, Dr. Williams, C. C. Babinington, G. Beutham, Dr. Burchell, the Prince Bonaparte, B. Maund, Rev. H. H. Higgins, R. Tones, L. Reeve, W. Y. Guise, Dr. T. Wright, Rev. W. Symonds, Prof. Gregory, Sir C. Hastings, W. H. Rumsey, Prof. Redfern, Prof. Corbett, J. Clarke, Prof. Owen, M. Masters, Prof. H. Jones, Dr. A. Waller, J. S. Bowerbank, Prof. G. B. Knowles, S. Stutchbury, Dr. B. W. Richardson, T. Egton, Sir J. Forbes.

The business of the Section commenced by the reading of a paper, 'Notes on Experiments in the Botanical Garden of the Royal Agricultural College,' by Prof. BUCKMAN, of the Agricultural College, Cirencester.—In this paper the author first described the soil and situation of the locale occupied as his garden, which, from being situated on Forest Marble Clay, is of a somewhat sterile character. The experimental portion is divided into 200 plots, most of which are 2½ yards square, some double that size, and a few still larger, now engaged in experiments with various manures. The plots are employed at the present time with crops mostly experimental, in the following classes:—grasses, 82; Papilionaceous feeding-plants, 25; crops for green food, 12; wheat, 6; garden vegetables, 5; turnips, experiments with manures, 14; economic plants, 13; flowering and ornamental plants, 40; total, 197. For the grasses many observations were given tending to show that several so-called species prove in cultivation to be varieties,—instances of which were given in the following genera:—*Bromus*, *Festuca*, and *Agrostis*. One case in particular of the three following forms of *Festuca*, *F. loliacea*, *F. pratensis*, and *F. elatior*, were shown to have been produced from the same seed by the gradual change of the first two into the latter. In the Papilionaceæ the author pointed out the production of the spring and winter varieties of Vetch from the *V. angustifolia*. In the genus *Trifolium* he made the following remarks on *T. pratense* and *T. medium*. The *T. pratense* occurs wild in all good and rich meadows and pastures; its place, however, in poor sandy soils is supplied by the *T. medium*, on which account the latter plant was some few years since introduced into agriculture to ensure a crop when the former usually failed. The seedsmen used to supply it under its botanical name of *T. medium*; but it is a curious circumstance that all the samples of this seed now in the market show it to be but a variety of *T. pratense*, and hence, at present, the best-informed seedsmen no longer send it out under the original botanical designation of *T. medium*, but under that of *T. pratense perenne*,—the fact being well established that we have two varieties of

broadclover in cultivation, whilst the true *T. medium* has been entirely lost to agriculture; and the whole evidence with respect to this subject showed that it has not been lost from neglect, but that it has merged into *T. pratense*; and if so, it remains as a most interesting matter for experiment, especially when it is considered that no doubt has been entertained by botanists of their distinction as species. Many experiments of a like kind were described, and their practical utility clearly pointed out.

The PRESIDENT called attention to Prof. Buckman's paper on account of the question it raised as to the permanence of specific characters in plants and animals.—Mr. MAUND referred to several experiments which he had made on the hybridization of wheat, showing to what extent the characters of the permanent varieties of wheat may be changed.—Dr. DAUBENY thought Prof. Buckman's paper valuable both in an economical and taxonomical point; for whilst it showed how external circumstances could change the characters of specific forms, it showed how certain forms could be produced which yielded a larger amount of profit to the farmer. There was a general impression amongst botanists that the tendency to give specific names to new forms of plants had been carried too far, and Prof. Buckman's paper seemed to indicate the way in which new forms had been produced.—The Rev. L. JENYNS referred to the fact, that two plants formerly thought to be distinct, the *Symphylum officinale* and the *S. asperum*, were growing together near Bath, and that it was now impossible to distinguish one from the other.—Mr. BENTHAM stated that by taking a single isolated flora like that of Great Britain, plants might be thought to belong to different species; but if the British species were compared with those of the Continent of Europe, it would be found that certain forms which were regarded as distinct, would be found to run into others. He referred to several species of *Trifolium* as confirmatory of his remarks. He also referred to the fact that not a single phenogamous plant was peculiar to the British Islands, but all were connected with peculiar floras on the Continent of Europe. Experiments had been made by Villemain on the conversion of wild plants into the cultivated forms, and he had perfectly succeeded with the carrot and some others; but the wild parsnip, which Prof. Buckman had successfully cultivated, had resisted all his experiments.—Dr. GILBERT referred to his own and Mr. Law's experiments, and stated that certain inorganic substances, as phosphate of lime, had a remarkable influence on the growth of many agricultural plants, producing considerable changes in the characters of their roots, leaves, and stems.—Mr. C. C. BABINGTON stated that with regard to the great majority of British plants which had been called species, there was no tendency to change in their characters. Many of these grew constantly together and under every possible variety of circumstances, but always presented the characters by which they were distinguished. He protested against the doctrine, that because plants resembled each other therefore they were not distinct. He did not believe in the identity of *Ægilops* and *Triticum*, but believed the intermediate forms which were obtained were the result of hybridization.

Dr. LANKESTER read a paper from Prof. Henfrey 'On the Development of the Embryo of Flowering Plants.'—In this paper Prof. Henfrey announced that Prof. Schleiden and Dr. Schacht had given up their opinion that the end of the pollen-tube produced the embryo in the seeds of flowering plants; and had come to the conclusion that the embryo is formed from a distinct protein mass, contained in the embryo-sac. He also pointed out that the embryo mass does not become a regular cell covered with cellulose till after the pollen-tube has come in contact with the embryo sac.

'Experiments and Observations on the Development of Infusorial Animalcules,' by Mr. J. SAMUELSON, Honorary Secretary to the Royal Institution (Literary Society), Hull.—The author mentioned that, in March last, he had traced in rain-water the growth of an Infusorial animalcule, called

Glaucoma scintillans, from one of the so-called Monads of Ehrenberg, and, aided by a diagram, pointed out its gradual development; explaining, at the same time, the action of the internal organs, such as those of digestion, &c., and the differentiation in structure which takes place as the animalcule grows older. He stated that he had fed these invisible forms with vegetable cake in the first instance, and under the microscope with indigo, so that the process of digestion was rendered visible (the latter is a mode which has for some time been adopted by microscopists). Another phase in the existence of the animalcule was then described by the author, namely, the encysting process; also, the subsequent appearance of numerous examples of Kerona,—a form of a higher character than *Glaucoma*, which the author believed to be the result of the process just named. Having obtained this glance at the life of *Glaucoma*, Mr. Samuelson then tried (at the suggestion, he said, of Mr. Robert Hunt) what effect the rays of the sun would have when filtered through variously-coloured glasses in accelerating or retarding animalcular life. For this purpose, he fitted up a box containing three compartments, covered by a pane of blue, red, and yellow glass respectively; and he found that whilst under the blue and red glass infusorial forms were rapidly developed, under the yellow hardly any signs of life were visible. He then transferred a portion of the infusion from the yellow to the blue compartment, when the infusorial forms very shortly made their appearance. After this he varied the experiment, employing distilled water and finely-cut hay, when the same results were even more strikingly exhibited. The temperature, he said, under the three compartments varied on the average about three degrees, though frequently the variation was greater, the blue always being the lowest. After mentioning one or two other circumstances connected with the experiment, Mr. Samuelson concluded with a review of the results, and observed that if they should be confirmed, that is, if the differently-coloured rays could be proved to operate variously upon animal and vegetable life (to which he also adverted in the course of his paper), much new light would be thrown on the debateable ground between the two kingdoms.

An animated discussion followed, in which Prof. BUSK, Prof. BELL, Dr. WILLIAMS, and other gentlemen took part. It turned chiefly upon the various theories concerning the digestive process in Infusoria. Dr. Williams being inclined to think that all aliment entered their bodies in a fluid state, by endosmosis, while the President and the author of the paper supported the generally-acknowledged theory of its admission into a kind of gullet.

Dr. WILLIAMS read a continuation of his 'Report on the British Annelida.'—The author gave, first, a summary of his researches on the 'fluid systems' of the Annelida. He stated that the so-called blood-vascular system was altogether wanting in the entire family of the Aphroditæ. This fact, as well as several others relating to the structure, disposition, and homology of the reproductive organs, induced him to place the whole family of the Aphroditæ, in which the genus *Polynoe* was included, in close juxtaposition with the Echinidan and Asteridan families (of the Echinodermata). The author then entered into a detailed history of the reproductive organs of the Annelida, stating that in the published Report he would present minute descriptions and figures of the results at which he had arrived. He proposed a new distribution of the class Turbellaria, as defined by recent observers. He pointed out striking differences of organization between the families, Gordiidae, Nemertidae, and Plausanidae, of which this class had hitherto been constituted. The author concluded his Report by a proposal to distribute the class Annelida rather in accordance with the reproductive system than that of any other of the organisms.

'Report on the Physical Conditions affecting the Distribution of Mollusca in the North-East Atlantic and Neighbouring Seas,' by Mr. R. M'ANDREW.—The Report being principally in a tabular form was not read at length. The researches of the author have extended through about 43°

of latitude, from the North Cape to the Canary Islands; and he has recorded the geographical and vertical range, nature of sea-bottom, point of maximum development, &c. of each species of Mollusca that came under his personal observation within that area; also, by a comparison of species found in ten different districts of the same area, he has endeavoured to illustrate the transition from Northern to Southern forms, and *vice versa*. He concluded with some general remarks on the conditions influencing the distribution of Mollusca, and upon the division of the marine Fauna of the Northern hemisphere into provinces.

Mr. C. WOODWARD, Dr. BALL, the Rev. Mr. HIGGINS, and Dr. LANKESTER referred to the great value of Mr. M'Andrew's researches, the results of whose dredging had contributed very largely to the establishment of those laws of the distribution of marine life which had been established by the late Edward Forbes.

FRIDAY.

'On the Variation of Species,' by the Rev. L. JENYNS.—Having referred to Prof. Buckman's paper, read in the Section yesterday, he stated that his remarks to-day would refer to the same subject; but that his illustrations were animals, and not plants. He then proceeded to refer to the fact that a large number of varieties of animals, more especially birds, had been put down as distinct species, which were undoubtedly the same bird. Whilst he was convinced of the existence of species, he felt sure that there was a tendency to regard as distinct many animals which were not so.

'On the Triticoid Forms of *Egilops*, and on the Specific Identity of *Centaurea nigra* and *C. nigrescens*,' by Prof. HENSLOW.—In this paper the Professor recorded the result of his own experiments, in which he had so far succeeded in changing the character of *Egilops ovata* as to lead him to conclude that M. Fabre's original statement, that it was the origin of the domestic wheat, *Triticum sativum*, was not altogether without foundation. He exhibited specimens, in which the form of *Egilops ovata* had undergone considerable change; but he had not yet succeeded in obtaining the characters of *Triticum sativum*. Prof. Henslow then exhibited forms of *Centaurea nigra* and *C. nigrescens*, in which it was seen that these plants had completely passed one into the other. He then referred to instances of the species of *Rosa*, *Primula*, and *Anagallis*, passing one into the other.

Mr. BENTHAM stated that when he first began to study botany, he thought permanent characters ought to be regarded as distinctive of species. He now, however, believed that permanent characters might be given to plants by locality and climate, which had no right to be regarded as distinct species. He then proceeded to refer to his own experience of the Flora of Europe, Asia, and Africa, as contrasted with that of the British Islands. He instanced more particularly *Bellis perennis* and *B. sylvestris* as the same plant, and *Taraxacum obovatum* and *T. levigatum*. He thought that all the forms of *Rubus*, with the exception, perhaps, of *R. cæsius*, ought to be referred to *R. fruticosus*.—Sir W. JARDINE referred to instances of birds in which external circumstances changed the colour of their plumage and other points of their structure.—Prof. BALFOUR referred to instances of plants which varied very much in their characters, according to the circumstances in which they were placed. He mentioned the case of *Pontederia crassipes*, which assumed, according to its treatment, quite different characters. Accidental changes in form frequently became permanent, of which he related an instance in a fern at the Edinburgh Botanic Gardens.—Dr. J. E. GRAY referred to the great influence which depth, age, and other circumstances had upon the character of shells. He believed the multiplication of species was a great evil, and calculated to deter persons from the study of natural history.—Prof. BUSK drew attention to the importance of distinguishing the characters which constituted a species from those which might characterize the individual. In the lower forms of both animals and plants, the individual exhibited itself as composed of hundreds and thousands of parts, each resembling the other.

'On the Morphological Relations of the Nervous System in the Annulose and Vertebrate Types of Organization,' by Prof. GOODSIR.—This paper was one of a series in which Prof. Goodsir reviewed the whole subject of the homologies of the animal kingdom, and proposed a new set of terms whereby to distinguish each system and part of a system.

A short discussion ensued, in which the PRESIDENT, Prof. OWEN, Dr. WILLIAMS, Dr. A. WALLER, and Dr. MACDONALD took part.

'Description of the Ajah, a kind of Whale, found by Dr. Vogel in the River Benué (Central Africa) in September, 1855,' translated and communicated by Dr. SHAW.—The Ajah is a species of whale found in the River Benué, or Upper Chadda, by Dr. Vogel, and is thus described by him:—It is black, horizontal, shovel-shaped, with two fins, situate close behind the head, each with three three-jointed bones, each ending in a short nail. The head is pointed; upper lip cleft; mouth extraordinarily small (in one individual, of 5 feet in length, the head was 18 inches long, 15 inches high, and the orifice of the mouth only 3 inches); nostrils directed forward and close over the upper lip—they are crescentic—eyes upward directed, close behind the nostrils, and (in the above-mentioned case only $3\frac{1}{2}$ inches from the end of the muzzle or snout) very small (3 lines in diameter), black; no spouting holes; gullet hard; tongue immovable (grown fast) on each side, above and below; five grinders (with 6 points and 3 roots each), extending only a few lines above the gun; front teeth wanting, instead of which the jaw is bordered with hard, short bristles; colour, dark grey; belly, whitish; the back covered with isolated, rough, red hairs. The Ajah becomes 10 feet long, and lives in the marshes inundated by the river. With the subsidence of the waters, the animal retires down the river to the ocean; but reappears in the commencement of the rainy season with the rising waters, bringing with it one or two young, at that period from 3 feet to 4 feet in length. Its food consists chiefly of grass; and in the dung, which in colour and form resembles that of the horse, no trace of fish was ever found. The Ajah is exceedingly fat; the flesh and fat, similar to that of the hog, is very well tasting. The bones are as hard as ivory, and rings are fabricated from them, and whips are made from the skin. The Ajah appears to be rare; and I do not believe that during the three months it remains in the Benué more than twenty to thirty are taken.

On this paper, Prof. OWEN read the following Note on the Ajah of Dr. Vogel.—The translation of Dr. Vogel's account of the animal which that enterprising traveller had seen in the River Benué, or Chadda, in Central Africa, permits of no doubt being entertained as to the class, and even genus, of animal to which that brief and somewhat vague account refers. The combination of two crescentic nostrils, with a pair of fins attached "close behind the head," shows that it is a cetaceous animal; whilst its food, "chiefly of grass," proves it to belong to the herbivorous section of the order Cetacea of the Cuvierian system, answering to the order Sirenia of Illiger. That order now includes three genera: *Manatus*, *Halicore*, and *Rytina*; the first of which is the only one in which the teeth are multicuspid and with two or more roots. It is, therefore, a species of Manatee that Dr. Vogel makes known to us under the name of Ajah. One species of *Manatus* has long been known as inhabiting certain rivers of Africa, especially those terminating on the west coast. This species is the *Manatus Senegalensis* of Cuvier and other zoologists. A stuffed specimen from that coast is in the British Museum; it was presented by Messrs. Vorster & Co., African merchants. The back and sides of the body are of a very dark grey, approaching to black; the belly is a light grey. The head is small in proportion to the body, and tapers to an obtuse muzzle; the upper lip is cleft, and the mouth small. The nostrils, a pair of crescentic clefts, with the convexity upward and backward, are situated as described in the Ajah: the eyes are, however, not situated close behind the nostrils, and they are distant $7\frac{1}{2}$ inches from the end of the muzzle. This ad-

measurement is from an individual about 3 feet longer than the one of which the dimensions are given by Dr. Vogel; but the difference of relative position seems still too great to be accidental or probable in animals of the same species. The hard short bristles which fringe the mouth, the scattered hairs along the back, the nails terminating each of the three-jointed digits of the pectoral fin, the want of front or incisive teeth, the hard ivory-like texture of the bones, the fatness and vapid nature of the flesh, are all characters common to the Manatees. The number of nails appears to vary in individuals of the same species, as might be expected in parts almost rudimentary in their development, and of no very great utility to the animal. Thus Cuvier notices in one individual of the American Manatee (*Manatus Americanus*, Desm., *M. Australia*, Tilesius) four flat rounded nails on the edge of the fin; the fourth being very small. In a fetus of this species there were but three nails on one fin, and four on the other. In a young Manatee, Cuvier noticed only two nails on each fin.* The three nails observed by Dr. Vogel on the fin of the Ajah cannot, therefore, be depended on as a constant or specific character. The teeth of the known species of Manatee have the crown divided into two transverse ridges,—each ridge, in the upper molars, being at first tri-tuberculate; but the intervals of the tubercles are so shallow that they are soon worn down, and a transverse ridge of dentine, bordered by enamel, is exposed. There is, also, an anterior and posterior low barrel ridge: the posterior one being most developed in the lower molars. The upper molars have each three diverging roots, one on the inner and two on the outer side. The lower molars have two fangs. Dr. Vogel's description of the grinders, as "having six points and three roots each," would apply to the upper molars of the *M. Senegalensis* before they had been much worn.† As to the number, "five," that doubtless refers to the number forming the series of teeth on each side of the jaw. I have not had the opportunity of examining the dentition of the known African Manatee. In the figure of the skull of the *M. Senegalensis* given by Cuvier; six molars are shown on the right side of both upper and lower jaws, and the coronoid process of the mandible may hide a greater number. In the American Manatee I have ascertained that at least nine molars are developed on each side of both jaws;‡ but they are never simultaneously in place or use. The greatest number which I have found in that condition is seven,—the socket of a shed anterior molar being at one end of the series, and that containing an incomplete ninth molar at the opposite end. Prof. Stannius has observed a small simple conical molar anterior to the normal two-ridged molars, and divided by a narrow interval from them, in a new-born American Manatee. The individual Ajah, 5 feet in length, which appears to have been more especially the subject of Dr. Vogel's account, was a half-grown animal, and the number of grinders (five), as well as their six-pointed crowns, doubtless relate to that circumstance. Fifteen feet is said to be the length to which adults of the *M. Senegalensis* attain: the Ajah becomes ten feet long. It may be a distinct and somewhat smaller species. The chief indication, however, of such specific distinction is the closer approximation of the eyes to the nostrils and to the end of the snout, as shown by the admeasurement given by Dr. Vogel. The easiest procurable and transportable evidence of the Ajah, and the best calculated to determine this point, would be the skull; but every part would be most acceptable; and, in the meanwhile, the species may be indicated and kept before the notice of the naturalists by entering the Ajah in the Zoological Catalogues as the *Manatus Vogeli*, or Vogel's Manatee.

A skull of a Manatee, obtained by Dr. Baikie in Africa, was also exhibited to the Section.

Dr. LANKESTER read a paper from Mr. Albany Hancock, 'On the Anatomy of Brachiopoda.' In

* 'Ossements Fossiles,' ed. 1836, 8vo. tom. viii. p. 13.

† Cuvier figures a similar molar of the *M. Americanus* in pl. 220, fig. 11.

‡ Loc. cit. fig. 4.

§ 'Odontography,' vol. I. p. 371, pl. 96, fig. 2.

this paper the author controverted Prof. Owen's opinion on the structure of these creatures, and confirmed that of Mr. Huxley, with respect to the nature of the little bodies which Prof. Owen had described as hearts.

Prof. OWEN stated that a first observer was like the leader of a forlorn hope,—he often made a step and fell, and others advanced to glory on his dead body. He was glad to find that Mr. Hancock had confirmed all he had done in the anatomy of Brachiopoda; and with regard to the matters of opinion, they should from this time have his best attention.

Prof. BUSK read a paper from Mr. Alder, entitled 'A Notice of some New Genera and Species of British Zoophytes.' The paper contained descriptions of thirteen new species, found, by the author, on the coasts of Northumberland and Durham. They include two new genera, and another genus not before recorded as European. They are as follows:—*Vorticella*,—a new genus allied to *Clava*, but differing in having the tentacles in two regular circles round the head, and dissimilar. The species *V. humilis* has five tentacles in the upper row, and ten in the lower.—*Eudendrium confectum*,—a small species encrusting old univalve shells, and having much the habit of a *Hydractinia*.—*E. capillare*,—a minute, slender branched species, having the polypes and reproductive capsules on different branches.—*Sertularia tricuspidata*,—somewhat resembling *S. polyzonis*, but more nearly allied to a New Zealand species (*S. Johnstoni*, Gray). It has three toothed apertures to the cells.—*Sertularia tenella*,—a species supposed, by Dr. Johnston, to be a variety of *S. rugosa* with the habit of *S. polyzonis*, but it differs from both in some of its characters.—*Campanularia volubilis*, *C. Johnstoni*, and *C. Hinckii*. The Linnean species is re-described for the purpose of distinguishing it from the other two, which have been confounded with it. According to the opinion of the author, the *C. volubilis* of Johnston differs from that of Ellis. The latter is considered to be the Linnean type, and the second species is named *C. Johnstoni*. They differ in the form of their ovi-capsules, as well as in other particulars, which were pointed out. A third species, with the margin of the cell sculptured in a castellated form, had been previously observed by the Rev. T. Hincks, and is here called *C. Hinckii*.—*C. gracillima*,—a species allied to *C. dumosa*.—*Grammaria*,—a genus lately described by Mr. Stimpson in 'A Synopsis of the Marine Invertebrata of Grand Manan,' published by the Smithsonian Institution of Washington. The British species, now first noticed, comes very near to the *G. robusta* of Stimpson, but differs in being much branched. It is called *G. ramosa*.—*Buskia*,—a new genus of Polyzoa, belonging to the family Vesiculariade. It is parasitical, and consists of small cells, closely adhering to other substances, with marginal spines also adhering. They are united by a creeping fibre. The species *B. nitens* is minute, shining, and horn-coloured.—*Farrella pedicellata*. Found on old shells from deep water. It differs from the *Laguncula* (*Farrella elongata* of Van Beneden in the great length and slenderness of the pedicle, and in some other respects.—*Alcyonidium nanmillatum*,—an encrusting species, found on old shells, distinguished by the size of the papille.—*A. albidum*,—enveloping the stem of *Plumularia falcata* with prominent whitish polypes.

'On the Fluid System of the Nematoid Entozoa,' by Dr. WILLIAMS. In this communication the author mentioned the leading facts:—1. That especially in the genus *Ascaris* the peritoneal cavity was occupied by a peculiar vesicular tissue, opening on the integumentary exterior, which appeared to be adapted to absorb fluid from without;—2. That it filled up that space which in the Annelids was free, and filled with an oscillatory fluid;—and 3. That in the Nematoid Entozoa there did not exist any trace whatever either of a blood-vascular or a water-vascular system.

Prof. BUSK stated that in the Guinea worm and some other forms of Entozoa there was a digestive cavity; and he thought Dr. Williams's conclusions were too general.

'On the Mechanism of Respiration in the Echi-

modern Family of Echinide,' by Dr. WILLIAMS.

The author stated that, after a very careful research upon this subject, he had arrived at the conclusion that the mechanism of the breathing process in the Echinide differed in a radical manner from that which obtained in the Asteride. In the latter, the entire integumentary skeleton was perforated by minute orifices, through which digital, membranous, coecal processes protruded, and in and by which the cavity fluid was brought into contact with the exterior aerating element. In the Echinide, on the contrary, the integumentary skeleton was perforated only by the suctorial organs. The branchiae in this family were restricted to the membranous area which surrounded the mouth.

Dr. LOWE read a paper, from Mr. Andrew Murray, 'On a New Species of Eche-neis (Sucking-Fish or Remora).' This species the author proposed to call *E. tropicus*. He described its minute anatomy, more particularly the apparatus by means of which this creature, whilst whales and sharks, or other large animals, are passing through the water, lays hold of them, and continues to attach itself to them as long as it pleases.

Dr. BALL, of Dublin, stated that recently a shark had come on shore at Kingstown in the midst of some ladies whilst bathing. It was captured, and there was found upon its body the common Remora, which had probably been the cause of its madly making for the shore.

THURSDAY.

SECTION E.—GEOGRAPHY AND ETHNOLOGY.

President.—Col. Sir H. C. RAWLINSON.
Vice-Presidents.—J. CRAWFORD, Sir J. DAVIS, Sir R. I. MURCHISON, Sir T. PHILLIPS, Gen. Sir G. POLLOCK, Col. F. YORKE.
Secretaries.—Dr. N. SNAW, R. CELL, F. D. HARTLAND, W. H. RUSSELL.

Committee.—The Archbishop of Cardiff, Sir J. Alexander, Dr. Blackie, J. Brown, C. H. Brucebridge, Dr. W. Camps, R. Chambers, G. F. Copeland, Dr. Louis Daa, J. D. Davis, A. G. Findlay, Dr. J. E. Gray, Rev. H. Grey, Dr. Grindrod, Rev. H. H. Higgins, Dr. Hincks, F. Hindmarsh, W. H. Howell, Dr. R. G. Latham, Dr. J. Lee, J. McClelland, Prof. Macdonald, Dr. Macpherson, Prof. Owen, Dr. Rae, R. J. Spiers, J. J. Stainton, A. B. St. Leger, Capt. C. Sturt, F. Talbot, W. S. W. Vaux, Hon. S. Walgrave, A. Wace, J. K. Watts, Dr. Whewell, T. Wright.

'On the First Traces of Human Art in Kent's Cavern, Torquay, especially Flint Knives and Arrow-heads beneath the Stalagmitic Floor,' by Mr. E. VIVIAN.—The peculiar interest of this subject consisted in its being the link between geology and antiquities, and the certainty afforded by the condition in which the remains are found of their relative age, the successive deposits being sealed up *in situ* by the droppings of carbonate of lime, which assume the form of stalagmite. The sources from which the statements in the paper were obtained were principally the original manuscript memoir of the late Rev. J. M'Enery, which is deplored by Prof. Owen, in his 'Fossil Mammalia,' and by other writers, as lost to science, but which has been recovered by Mr. Vivian, and was produced before the Section; also the report of the Sub-Committee of the Torquay Natural Society, and his own researches. The cavern is situated beneath a hill about a mile from Torquay and Babbacombe, extending to a circuit of about 700 yards. It was first occupied by the bear (*Ursus spelæus*) and extinct hyena, the remains of which, with the bones of elephants, rhinoceros, deer, &c., upon which they preyed, were strewn upon the rocky floor. By some violent and transitory convulsion, a vast amount of the soil of the surrounding country was injected into the cavern, carrying with it the bones and burying them in its inmost recesses. Immediately upon its subsidence the cavern appears to have been occupied by human inhabitants, whose rude flint instruments are found upon the mud beneath the stalagmite. A period then succeeded during which the cavern was not inhabited until about half of the floor was deposited, when a streak containing burnt wood and the bones of the wild boar and badger was deposited; and again the cave was unoccupied, either by men or animals, the remaining portion of the stalagmite being, both above and below, pure and unstained by soil or any foreign matter. Above the floor have been found remains of Celtic, early British and Roman remains, together with those of more modern date. Among the inscriptions is one of interest as connected with the landing of William the Third, on the opposite side of the bay, "W. Hodges, of Ireland, 1688."

In the discussion which followed, and in which Sir HENRY RAWLINSON, the SECRETARY of the ETHNOLOGICAL SOCIETY, and others took part, the position of the flints beneath the stalagmite seemed to be admitted, although contrary to the generally received opinion of the most eminent geologists, thus carrying back the first occupation of Devon to very high antiquity, but not such as to be at variance with Scriptural chronology—the deposit of stalagmite being shown to have been much more rapid at those periods when the cavern was not inhabited by the greater discharge of carbonic acid gas. Without attempting to affix with any certainty more than a relative date to these several points, or forming a Scriptural interpretation upon natural phenomena, which, as Bacon remarked, too often produces merely a false religion and a fantastic philosophy, Mr. VIVIAN suggested that there was reason for believing that the introduction of the mud was occasioned, not by the comparatively tranquil Mosaic Deluge, which spared the olive and allowed the ark to float without miraculous interposition, but by the greater convulsion alluded to in the first chapter of Genesis which destroyed the pre-existing races of animals—most of those in this cavern being of extinct species, and prepared the earth for man and his contemporaries.

'On a Range of Volcanic Islets to the South-East of Japan,' by Mr. A. G. FINDLAY.—The recent importance of our commercial relations with Japan, consequent upon the opening of the ports of Nagasaki and Hakodadi to our merchants, and the increasing commerce now developing itself between Eastern Asia and North-West America, has rendered the great ocean-highway between Nippon and the Bonin Islands of great interest. The dangers of this region to the seaman is much increased by the rapid Japanese current, first shown by the author in 1850 to run from east to west across the North Pacific Ocean, in an analogous course to the Atlantic Gulf Stream. This mighty stream running to the E.N.E., through the space under consideration, has given rise to the very complicated nature of the so-believed new discoveries. Above thirty of these announcements being, by investigation, reduced to five or six rocky islets of very singular character. The islands nearest to Japan, the Broken Isles, Falsisyo, the Japanese penal colony, and South Island, were shown to be in some cases defectively represented. The Redfield Rocks are those discovered by Broughton, and corrected by Capt. Donnell in 1850, and therefore not a discovery by the United States Japan Expedition in 1854. The islands south of this are, perhaps, Tibbit Island of 1844, then an island or reef of pointed rocks, discovered by Coffin in 1825, afterwards announced as new by Capt. Jurien-Lagreville in May 1850; again announced as new by Capt. Rogers in 1851; again in 1852 by Capt. Drescher of the Walter, and again in 1856 by Capt. Grove, each person believing that he had discovered a new island. Others similar were also cited. The next group, perhaps, is about eight miles to the south of the last, or lat. 31° 53' N., long. 139° 55' E., was discovered in the Dutch corvette, the Koerier, August 24, 1849, and are of a very dangerous character. Jeannetto Island, twenty-three miles further south, is doubtful. Smith Island, in lat. 31° 12', long. 139° 55', discovered by Capt. Smith of the Heber, March 1846, is a most singular needle-rock, springing from unfathomable depths to 300 feet high and not more than 250 feet diameter at the base. It has been seen by others. Ponafdin Island of the Russians lies next, to the south. St. Peter's or Black Rock, first seen in 1821, and again in 1853, is a wonderful column of basalt or volcanic glass, 200 feet high, parallel and quite perpendicular sides, not more than 150 feet in diameter, and like a bottle in appearance. It is in lat. 29° 42', long. 140° 15'. The volcanic nature of these remarkable rocks lying near the meridian of 140° E. indicates a continuation of those immense volcanic ranges which pass along the Kurile Islands, throughout Nippon, the great Japanese island, and thence to the well-known range of spiracles in the Ladrone Islands. At the northern end of this range is the well-known

Mount Fusi, 10,000 or 12,000 feet in height, now quiescent. To the south of this volcano is Simoda, —a port between the two capitals of Japan, Jedo and Miako, which has been thrown open to the commerce of the United States in 1854. The dreadful earthquake of 1854 at this place was alluded to. It totally changed the character of the harbour of Simoda, destroyed the fine city of Osaca, and injured Jedo. The wave which was caused by this upheaval of the land traversed the entire breadth of the North Pacific in twelve hours and some few minutes, a distance of between 4,000 and 5,000 miles, demonstrating the depth of that ocean to be between two and three miles. The diagram illustrating the paper showed the singular confusion before mentioned in the hydrography of these small but important positions. The Bonin Islands lie to the southward. They have recently been made the subject of some uncourteous dispute between the Americans as to the right of discovery and ownership. There can be no doubt of their Japanese discovery, and are the Arzbiopo Islands of the early Spaniards. Next follows Captain Coffin in 1824-5, who was believed to be an Englishman, but which is controverted by Commodore Perry of the U.S.N. The particulars of the discovery were related. Next, Captain (now Admiral) Beechey saw them in 1827, and took possession of them before the discovery of Coffin was published. They were colonized under the direction of H.B.M.'s consul at Oahu in 1830, the survivors of those settlers still living there. These islands have been lately explored by the United States Japan Expedition, and their volcanic origin established. It was hoped that some authority to repel aggression would be established there, as the islands have now become valuable as a coaling and refitting station for steam-vessels. The Volcano Isles which follow are tolerably well known, and from these the volcanic submarine ridges diverge to S.S.E. and S.W., several isolated shoals and volcanic rocks having been discovered in these directions.—The paper concluded with a hope that our naval officers would endeavour to clear up the embarrassing confusion which had arisen from the imperfect accounts given of this now important region.

On the Plastic Origin of the Cuneiform Character and its relation to our own Alphabet, by Mr. J. W. J. NASMYTH.—Mr. Nasmyth expressed an opinion that the Cuneiform character was formed by the pressure of the corner of a hard brick on the soft clay, and that for the brick was afterwards substituted a stylus of a triangular shape; that the shape of the character was preserved after the material and instrument were changed to stone and a chisel. He proceeded to point out his reasons for tracing a connexion between Assyrian and English characters. He pointed out the form of the serifs to the A and T, which in the first ages of printing nearly resembled the wedge-like appearance which distinguished the Cuneiform character.

Dr. HINCKS expressed his dissent from Mr. Nasmyth's conclusions; it was well established that the form of A was taken from a bull's face, and the form of the T from a cross.—Mr. CRAUFURD avowed himself a convert to Mr. Nasmyth's view with regard to our own alphabet. The English alphabet was derived from the Phœnician, which was derived from Egypt, the alphabet of which was certainly of a symbolical character. This did not refer to all alphabets, for in Hindûstan there were ten or twelve forms of alphabet with no signs of a symbolical character. There the words consisted of mere scratches,—the vowels being expressed by dots. This was rendered necessary by the nature of the materials,—paper not having been introduced until the second century of the Christian era.—Prof. WHEWELL said, Mr. Nasmyth appeared to have involved his subject in something of error by confusing the notion of the elements of which the letter is composed. The serifs are absent in the great body of Greek inscriptions, though there may be some half-dozen specimens in which they appear. The cross-lines appeared to have been used by way of giving a definite termination to the other strokes. Mr. Nasmyth's view gave no explanation of the

introduction of any letters with curvilinear elements.—Mr. NASMYTH replied, that the marks to which he referred were not merely cross-lines, but a triangular mark carefully chipped out.—Sir H. RAWLINSON said, he had no doubt whatever as to the correctness of Mr. Nasmyth's idea as to the plastic origin of the Cuneiform character; but they had yet to explain why the inhabitants of the banks of the Euphrates adopted this character to express their ideas. The Cuneiform character was not an alphabet, but a series of pictures. The inhabitants of the banks of the Euphrates were cognate with a similar people which resided on the banks of the Nile. Cush and Misraim were brothers; Nimrod was the son of Cush. The character was afterwards degraded into the hieratic, and then into a phonetic alphabet. According to the prior, or Hamite, character, a house was represented simply by a square, which represented the letter A in ancient Egypt. The colonists had to represent this as a letter, and they drew some lines in the square, and gave it the power of A. The Semites afterwards gave it the power of B, Beth being the name of a house in Assyria. In the earliest bricks different handwritings could be traced,—and he could tell by seeing a brick what palace it came from and the writer. The plastic clay was carved on first by the corner of a brick, and then with a stylus, and in some of the frescoes found, the priest was represented with a cylinder in one hand and a stylus in the other. The original Chaldeans wrote on bricks; the inscriptions on later bricks were formed from a stamp on moulds. The Assyrians also used a cursive character approximating to that used by the Phœnicians, and quite independent of the cuneiforms. This Aleph corresponds to A. Beta is the house, Beth; Gimmel, the name of a camel, which it has the form of, G. Although there was no immediate connexion between the English alphabet and the cuneiform character, he thought he could show how a particular connexion might have been introduced, and which might have given rise to the peculiarity referred to by Mr. Nasmyth. There was a particular Assyrian colony transported almost to the banks of the Mediterranean, the Samaritans. The oldest Samaritan character we have is cuneiform,—the Semitic character written with arrow-heads. In deference to the usages of that colony brought from the Tigris, this peculiarity of a foot to letters was adopted in Syria. We first find it used by the Syro-Macedonians; it was adopted by the Samaritans, and by them brought from Syria to Palestine. Great care was bestowed on the graphic art; the high priest was made the keeper of the records. Later inscriptions, to prevent decay, were overlaid with flint varnish, which in one instance had preserved an inscription of 1,000 lines, although the limestone on which it was written was crumbling away. This flint varnish is supposed to be a modern invention, but it was known to Darius Hystaspes.

Report by Assistant Surveyor Robert Austin of an Expedition to explore the Interior of Western Australia.—Mr. AUSTIN detailed the particulars of an exploring expedition to Australia. He expressed the opinion that in that neglected district, there is probably one of the finest gold fields in the world, and suggested that a central depot should be formed on the great bend of the Murchison river.

SECTION F.—ECONOMIC SCIENCE AND STATISTICS.

President.—Lord STANLEY.

Vice-Presidents.—T. TOOME, Dr. J. SPENCER, W. TITE, J. T. DANSON, J. HEYWOOD, Dr. W. FAIR. Secretaries.—W. NEWBARCH, W. N. HAYCOCK, E. CHESHIRE, Rev. C. H. BROMBY, W. M. TARTT. Committee.—R. AKINHO, W. J. ARMSTRONG, E. ASHWORTH, R. BARRINGTON, R. BEAMISH, Dr. R. BULL, Dr. BOOTH, S. BROWN, W. MFG. BOND, S. BAILEY, Dr. CAMPS, L. K. DAA, G. HADFIELD, G. W. HASTINGS, R. HILL, M. D. HILL, Dr. J. Lee, Prof. MORE, J. McCLELLAND, W. NEILD, Lieut. Gen. Sir C. W. PASLEY, J. PERRY, Prof. ROGERS, H. RUMNEY, R. J. SPIERS, J. SHUTTELCROFT, J. YATES, Rev. A. HUME.

Lord STANLEY, President of the Section, pronounced an opening Address, in which he reviewed the objects and the domains of Statistics. He advocated the establishment of a statistical department of Government, charged with the annual publication of such facts relative to the management of national affairs as are reducible to numerical expression. We have statistics enough pre-

sent to Parliament every session, but they are, in the great majority of cases, called for by individuals. They are drawn out to suit the particular purpose of those who move for them; they are, accordingly deficient in unity, and often of no use beyond the moment. Now, I speak [said Lord Stanley] from some personal observation when I say, that at a cost hardly greater than that of these desultory fragmentary isolated returns (which have in addition the inconvenience, coming as they do at unexpected times and without any regularity, of throwing a sudden increase of work on particular officers), it would be possible to present to the nation such a yearly *résumé* of administrative statistics as should, to a very great degree, supersede the present system (if system it can be called) of moving for returns as and when they are wanted. I have said that I think a statistical department desirable, instead of a statistical branch in every department, because the former method gives better security for the unity of plan, and because the work will be best done by those whose sole and undivided business it is. I have not referred to the meetings of the International Congress of Brussels and Paris, because, on such a subject, I could offer no remarks that would not naturally occur to those whom I address. Such meetings have a twofold value; first, they extend the field of statistical research,—and we have seen that accuracy of result varies directly as the magnitude of the area of investigation;—secondly, they form a new link between nation and nation, because, though speech differs, arithmetical notation is the same everywhere. In proportion, therefore, as numerical is substituted for descriptive statement, we approach nearer to that otherwise impracticable dream of philosophers—a Universal Language. There is, I believe I may state, a probability of the Congress of 1857 being held in London,—an expectation which seems both natural and reasonable, inasmuch, as has been averred in public and not denied, that the first design of holding such international meetings was suggested by the analogy of the Hyde Park Exhibition of 1851. Should the event I allude to take place, it will become the duty of all concerned in statistical science to see that such an opportunity does not pass unimproved; so that 1858 may find us with a thoroughly organized system for the annual collection and publication of national facts, assimilated, if possible, to the system of France and Belgium; for it must be borne in mind that the objects to be arrived at are two—one, the adoption of a method as perfect in itself as possible; the other, an assimilation of that method to those which prevail elsewhere, so that nations may mutually profit by each other's experience. As a proof how much such comparing of notes is required, I may remind you that the census of Ireland and Scotland was taken in a manner different from that of England, while no attempt has ever been made to bring the entire British empire, including India and the colonies, under a single statistical organisation. The constitution of such a statistical department as we require is matter of fair discussion at the approaching Congress. Probably the most effective combination of working talent would be that obtained by the appointment of a Commission or Board to preside over the issuing of official publications, partly composed of scientific men, partly of members of the permanent or Parliamentary administration (the former preferable, as having more leisure), who would bring in the necessary elements of a knowledge of official customs. This is, I believe, the system actually existing in Belgium. In Prussia, there is a minister at the head of the statistical department, but those who wish to find the question more fully discussed will find information in a valuable report by Dr. Farr to the Registrar-General, dated October, 1855. I wish also to point out to the Association the advantage of such a communication between the Home Government and the leading British Colonies in reference to the approaching Congress, as may enable such of them as desire to represent themselves by means of delegates.

'The Family Principle in London Banking,' by Mr. J. W. GILBART.

'On the Connexion between Slavery in the

United States of America and the Cotton Manufacture in the United Kingdom,' by Mr. J. T. DANSON.—Mr. Danson argued in favour of five propositions—which may be thus expressed:—1. That cotton, from the conditions of climate necessary to its culture, cannot be grown in Europe, but that, with the single and not important exception of the factories in the New England States of America, it is, and must long continue to be, manufactured almost exclusively in Europe. 2. That the present supply is chiefly raised, and for the present must continue to be raised, by slave-labour—seeing that while, for fifty years we have sought over the whole earth for cotton, we have during that time continued to obtain from the slave States of the American Union a continually increasing proportion of our entire supply. 3. That two-thirds in number at least of the slave population of the United States have been called into existence, and are now directly or indirectly maintained, for the supply of cotton for exportation. 4. That of the cotton thus exported, three-fourths at least in value are raised for, and sent to, this country alone. And 5. That of the entire quantity we import, four-fifths at least in value are thus derived from the United States. Each proposition was supported by tabular accounts extracted from the public records of this country and the United States, and the conclusion was expressed thus:—"That hence, in the present state of the commercial relations of the two countries, the cotton-planters of the United States are interested to the extent of two-thirds at least of their entire exportable produce in the maintenance of the cotton manufacture of the United Kingdom; and that reciprocally the cotton manufacturers of the United Kingdom, and through them the entire population of the kingdom, are interested, to the extent of more than four-fifths of the raw material of that manufacture, in the existing arrangements for maintaining the cotton culture of the United States."

"On the Progress, Extent, and Value of the Earthenware, Porcelain, and Glass Manufacture of Glasgow," by Dr. J. STRANG.—Till within these thirty years, there was only one pottery, one flint-glass, and one bottle-work in the city of Glasgow. The trade in all these articles may therefore be said to be but of yesterday, when it is stated that there are now eight large potteries engaged in the manufacture of all kinds of china, porcelain, parian, and other ware, four flint-glass manufactories, and twelve bottle-houses, with a considerable number of manufactories of ornamental vases, chimney tops, gas retorts, drain and water pipes, fire-bricks, figures and fountains from fire-clay, and several very extensive works, wholly engaged in the production of coarse earthenware, sugar moulds, and drips and chimney cans from the red clay of the district. The following statistical facts prove the rapid rise of this important industry. During the year 1854 the eight manufactories of porcelain and earthenware imported and used 7,805 tons of clay from Dorset, Devon, and Cornwall, 1,240 tons of Cornish stone, and 2,850 tons of flints, employing in all 11,895 tons of shipping,—while in these works were consumed about 50,000 tons of coals. The number of persons employed during the same period, consisting of men, boys, and girls, were 2,000, who, on an average, gained 12s. per week of wages; making an aggregate of 62,400l. paid to workpeople in the Glasgow potteries during the twelvemonth. The total value of the industry may be fairly estimated at 120,000l., while the quantity exported in 1854 from the Clyde amounted to 4,831,166 pieces.

"On the Former and Present Plans of disposing of the Waste Lands in the Australian Colonies," by Mr. W. NEWMARCH.

FRIDAY.

"On the Population of Ireland, from 1603 to 1856, with Notes suggestive of the Causes for the Periodical Increase or Decrease," by Mr. V. SCULLY, M.P.

"On the Money Rate of Wages in Glasgow and the West of Scotland," by Dr. J. STRANG.—The object of this paper was to show that since 1850 the rate of wages had risen, and that the working classes ought from this, and from the policy of the

Government in reducing taxation on luxuries, to be in a better condition than they ever were before. The first proof given was in the advance of poor loom-weavers' and cotton-spinners' wages; but the rise has arisen principally from increased production, in consequence of improvements in machinery. The second proof was, that mining labour had risen from 2s. 6d. a day to 5s., and that the workmen connected with the manufacture of pig and malleable iron were receiving from 25l. to 50l. per cent. more than they did in 1852. The third proof was, that engineers' and mechanics' wages had advanced, from 1851 to 1856, from 3-4 shillings per day to 4. The fourth industry was that of house construction, in which those employed had received as follows:—Quarriers, 6s. per week advance; masons, 4s. per week; carpenters, since 1851, an advance of 2s. 6d. and a limitation of hours of labour; common labourers, 5s. advance per week. Even the hand-loom weavers had improved since 1851, when their wages were at the lowest. The deduction from the paper was, that a gradual rise had been established in all wages connected with the leading industries of Glasgow, and that, too, in the face of the reduction which had been made in the hours of labour.

"On the Crédit Mobilier and other recent Credit Institutions in France," by Mr. W. NEWMARCH.

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